EVENINGS AT HOME;

OR,

THE JUVENILE BUDGET OPENED.

CONSISTING OF

A VARIETY OF MISCELLANEOUS PIECES,

FOR

THE INSTRUCTION AND AMUSEMENT OF YOUNG PERSONS.

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SIXTEENTH EVENING.

PERSEVERANCE, AGAINST FORTUNE.

A STORY.

Theodore was a boy of lively parts and engaging manners; but he had the failing of being extremely impatient in his temper, and inclined to extremes. He was ardent in all his purſuits, but could bear no diſappointment; and if the leaſt thing went wrong, he threw up what he was about in a pet, and could not be prevailed upon to reſume it. His father (Mr. *Carleton*) had given him a bed in the garden, which he had cultivated with great delight. The borders were ſet with double daiſies of different colours, next to which was a row of auriculas and polyanthuſes. Beyond

were ſtocks and other taller flowers and ſhrubs; and a beautiful damaſk roſe graced the centre. This roſe was juſt budding, and *Theodore* watched its daily progreſs with great intereſt. One unfortunate day, the door of the garden being left open, a drove of pigs entered, and began to riot on the herbs and flowers. An alarm being ſounded, *Theodore* and the ſervant boy ruſhed upon them, ſmacking their whips. The whole herd in affright, took their courſe acroſs *Theodore*'s flower-bed, on which ſome of them had before been grazing. Stocks, daiſies, and auriculas were all trampled down or torn up; and what was worſt of all, a large old ſow ran directly over the beautiful roſe tree, and broke off its ſtem level with the ground. When *Theodore* came up, and beheld all the miſchief, and eſpecially his favourite roſe ſtrewed on the ſoil, rage and grief choaked his utterance. After ſtanding a while, the pic-

ture

ture of deſpair, he ſnatched up a ſpade that ſtood near, and with furious haſte dug over the whole bed, and whelmed all the relics of his flowers deep under the ſoil. This exertion being ended, he burſt into tears, and ſilently left the garden.

His father, who had beheld the ſcene at a diſtance, though ſomewhat diverted at the boy's childiſh violence, yet began ſeriouſly to reflect on the future conſequences of ſuch a temper, if ſuffered to grow up without reſtraint. He ſaid nothing to him at the time, but in the afternoon he took him a walk into a neighbouring pariſh. There was a large wild common, and at the ſkirts of it, a neat farm-houſe, with fields lying round it, all well fenced, and cultivated in the beſt manner. The air was ſweetened with the bean-flower and clover. An orchard of fine young fruit trees lay behind the houſe; and before it, a little garden, gay with all the flowers

of the ſeaſon. A ſtand of bee-hives was on the ſouthern ſide, ſheltered by a thick hedge of honeyſuckle and ſweet-briar. The farm-yard was ſtocked with pigs and poultry. A herd of cows with full udders, was juſt coming home to be milked. Every thing wore the aſpect of plenty and good management. The charms of the ſcene ſtruck *Theodore* very forcibly, and he expreſſed his pleaſure in the warmeſt terms. This place, ſaid his father, belongs to a man who is the greateſt example I know of patient fortitude bearing up againſt misfortune; and all that you ſee is the reward of his own perſeverance. I am a little acquainted with him; and we will go in and beg a draught of milk, and try if we can prevail upon him to tell us his ſtory. *Theodore* willingly accompanied his father. They were received by the farmer with cordial frankneſs. After they were ſeated, Mr. *Hardman*, (ſays Mr. *Carleton*) I have often heard of part

of your adventures, but never had a regular account of the whole. If you will favour me and my little boy with the ſtory of them, we ſhall think ourſelves much obliged to you. Lack a day! ſir, (ſaid he) there's little in them worth telling of, as far as I know. I have had my ups and downs in the world, to be ſure, but ſo have many men beſide. However, if you wiſh to hear about them, they are at your ſervice; and I can't ſay but it gives me pleaſure ſometimes to talk over old matters, and think how much better things have turned out than might have been expected. Now I am of opinion (ſaid Mr. *C.*) that from your ſpirit and perſeverance a good concluſion might always have been expected. You are pleaſed to compliment, ſir (replied the farmer); but I will begin without more words.

You may perhaps have heard that my father was a man of good eſtate. He thought of nothing, poor man! but

how to ſpend it; and he had the uncommon luck to ſpend it twice over. For when he was obliged to ſell it the firſt time, it was bought in by a relation, who left it him again by his will. But my poor father was not a man to take warning. He fell to living as he had done before, and juſt made his eſtate and his life hold out together. He died at the age of five and forty, and left his family beggars. I believe he would not have taken to drinking as he did, had it not been for his impatient temper, which made him fret and vex himſelf for every trifle, and then he had nothing for it but to drown his care in liquor.

It was my lot to be taken by my mother's brother, who was maſter of a merchant ſhip. I ſerved him as an apprentice ſeveral years, and underwent a good deal of the uſual hardſhip of a ſailor's life. He had juſt made me his mate in a voyage up the Mediterranean, when we had the misfortune to be wrecked on

the coaſt of Morocco. The ſhip ſtruck at ſome diſtance from ſhore, and we lay a long ſtormy night with the waves daſhing over us, expecting every moment to periſh. My uncle and ſeveral of the crew died of fatigue and want, and by morning but four of us were left alive. My companions were ſo diſheartened, that they thought of nothing but ſubmitting to their fate. For my part, I thought life ſtill worth ſtruggling for; and the weather having become calmer, I perſuaded them to join me in making a kind of raft, by the help of which, with much toil and danger, we reached the land. Here we were ſeized by the barbarous inhabitants, and carried up the country for ſlaves to the emperor. We were employed about ſome public buildings, made to work very hard with the whip at our backs, and allowed nothing but water and a kind of pulſe. I have heard perſons talk as if there was little in be-

ing a ſlave but the name; but they who have been ſlaves themſelves, I am ſure will never make light of ſlavery in others. A ranſom was ſet on our heads, but ſo high, that it ſeemed impoſſible for poor friendleſs creatures like us ever to pay it. The thought of perpetual ſervitude, together with the hard treatment we met with, quite overcame my poor companions. They drooped and died one after another. I ſtill thought it not impoſſible to mend my condition, and perhaps to recover my freedom. We worked about twelve hours in the day, and had one holiday in the week. I employed my leiſure time in learning to make mats and flag baſkets, in which I ſoon became ſo expert, as to have a good many for ſale, and thereby got a little money to purchaſe better food, and ſeveral ſmall conveniencies. We were afterwards ſet to work in the emperor's gardens; and here I ſhowed ſo much good-will and attention, that I got into

favour

favour with the overſeer. He had a large garden of his own; and he made intereſt for me to be ſuffered to work for him alone, on the condition of paying a man to do my duty. I ſoon became ſo uſeful to him, that he treated me more like a hired ſervant than a ſlave, and gave me regular wages. I learned the language of the country, and might have paſſed my time comfortably enough, could I have accommodated myſelf to their manners and religion, and forgot my native land. I ſaved all I could, in order to purchaſe my freedom; but the ranſom was ſo high, that I had little proſpect of being able to do it for ſome years to come. A circumſtance, however, happened which brought it about at once. Some villains one night laid a plot to murder my maſter and plunder his houſe. I ſlept in a little ſhed in the garden where the tools lay; and being awak-

ened by a noiſe, I ſaw four men break through the fence, and walk up an alley towards the houſe. I crept out with a ſpade in my hand, and ſilently followed them. They made a hole with inſtruments in the houſe-wall big enough for a man to enter at. Two of them had got in, and the third was beginning to enter, when I ruſhed forward, and with a blow of my ſpade clove the ſkull of one of the robbers, and gave the other ſuch a ſtroke on the ſhoulder, as diſabled him. I then made a loud outcry to alarm the family. My maſter and his ſon, who lay in the houſe, got up, and having let me in, we ſecured the two others, after a ſharp conflict, in which I received a ſevere wound with a dagger. My maſter, who looked upon me as his preſerver, had all poſſible care taken of me; and as ſoon as I was cured, made me a preſent of my liberty. He would fain have kept me with him, but my

mind was ſo much bent on returning to my native country, that I immediately ſet out to the neareſt ſeaport, and took my paſſage in a veſſel going to Gibraltar.

From this place I returned in the firſt ſhip for England. As ſoon as we arrived in the Downs, and I was rejoicing at the ſight of the white cliffs, a man-of-war's boat came on board, and preſſed into the king's ſervice all of us who were ſeamen. I could not but think it hard that this ſhould be my welcome at home after a long ſlavery; but there was no remedy. I reſolved to do my duty in my ſtation, and leave the reſt to providence. I was abroad during the remainder of the war, and ſaw many a ſtout fellow ſink under diſeaſe and deſpondence. My knowledge of ſeamanſhip got me promoted to the poſt of a petty officer, and at the peace I was paid off, and received a pretty ſum for wages and prize-

money. With this I ſet off for London. I had experienced too much diſtreſs from want, to be inclined to ſquander away my money, ſo I put it into a banker's hands, and began to look out for ſome new way of life.

Unfortunately, there were ſome things of which I had no more experience than a child, and the tricks of London were among theſe. An advertiſement offering extraordinary advantages to a partner in a commercial concern, who could bring a ſmall capital, tempted me to make enquiry about the matter; and I was ſoon cajoled by a plauſible artful fellow to venture my whole ſtock in it. The buſineſs was a manufacture, about which I knew nothing at all; but as I was not afraid of my labour, I ſet about working as they directed me, with great diligence, and thought all was going on proſperouſly. One morning, on coming to the office, I found my partners decamped;

decamped; and the ſame day I was arreſted for a conſiderable ſum due by the partnerſhip. It was in vain for me to think of getting bail, ſo I was obliged to go to priſon. Here I ſhould have been half ſtarved, but for my Mooriſh trade of mat-making, by the help of which I bettered my condition for ſome months; when the creditors, finding that nothing could be got out of me, ſuffered me to be ſet at liberty.

I was now in the wide world without a farthing or a friend, but I thanked God that I had health and limbs left. I did not chooſe to truſt the ſea again, but preferred my other new trade of gardening; ſo I applied to a nurſery-man near town, and was received as a day-labourer. I ſet myſelf cheerfully to work, taking care to be in the grounds the firſt man in the morning and the laſt at night. I acquainted my employer with all the practices I had obſerved in Morocco, and got him,

him, in return, to inſtruct me in his own. In time, I came to be conſidered as a ſkilful workman, and was advanced to higher wages. My affairs were in a flouriſhing ſtate. I was well fed and comfortably lodged, and ſaved money into the bargain. About this time I fell in company with a young woman at ſervice, very notable and well behaved, who ſeemed well qualified for a wife to a working man. I ventured to make an offer to her, which proved not diſagreeable; and after we had calculated a little how we were to live, we married. I took a cottage with an acre or two of land to it, and my wife's ſavings furniſhed our houſe and bought a cow. All my leiſure time I ſpent upon my piece of ground, which I made very productive, and the profits of my cow, with my wages, ſupported us very well. No mortal, I think, could be happier than I was after a hard day's work,

work, by my own fireside, with my wife beside me, and our little infant on my knee.

After this way of life had lasted two or three years, a gentleman who had dealt largely with my master for young plants, asked him if he could recommend an honest industrious man for a tenant, upon some land that he had lately taken in from the sea. My master, willing to do me a kindness, mentioned me. I was tempted by the proposal, and going down to view the premises, I took a farm upon a lease at a low rent, and removed my family and goods to it, one hundred and fifty miles from London. There was ground enough for money, but much was left to be done for it in draining, manuring, and fencing. Then it required more stock than I was able to furnish; so, though unwilling, I was obliged to borrow some money of my landlord, who

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let me have it at moderate intereſt. I began with good heart, and worked late and early to put things in the beſt condition. My firſt misfortune was, that the place proved unhealthy to us. I fell into a lingering ague, which pulled me down much, and hindered my buſineſs. My wife got a ſlow fever, and ſo did our eldeſt child (we had now two, and another coming). The poor child died; and what with grief and illneſs, my wife had much ado to recover. Then the rot got among my ſheep, and carried off the beſt part of my flock. I bore up againſt diſtreſs as well as I could; and by the kindneſs of my landlord was enabled to bring things tolerably about again. We regained our health, and began to be ſeaſoned to the climate. As we were cheering ourſelves with the proſpect of better times, a dreadful ſtorm aroſe—it was one night in February—I ſhall never forget it—and drove the ſpring tide

with ſuch fury againſt our ſea-banks, that they gave way. The water ruſhed in with ſuch force, that all was preſently a ſea. Two hours before daylight, I was awaked by the noiſe of the waves daſhing againſt our houſe, and burſting in at the door. My wife had lain in about a month, and ſhe and I, and the two children, ſlept on a ground floor. We had juſt time to carry the children up ſtairs, before all was afloat in the room. When day appeared, we could ſee nothing from the windows but water. All the outhouſes, ricks, and utenſils were ſwept away, and all the cattle and ſheep drowned. The ſea kept riſing, and the force of the current bore ſo hard againſt our houſe, that we thought every moment it muſt fall. We claſped our babies to our breaſts, and expected nothing but preſent death. At length we ſpied a boat coming to us. With a good deal

of

of difficulty it got under our window, and took us in with a ſervant maid and boy. A few clothes was all the property we ſaved; and we had not left the houſe half an hour, before it fell, and in a minute nothing was to be ſeen of it. Not only the farm-houſe, but the farm itſelf was gone.

I was now again a ruined man, and what was worſt, I had three partners in my ruin. My wife and I looked at one another, and then at our little ones, and wept. Neither of us had a word of comfort to ſay. At laſt, thought I, this country is not Morocco, however. Here are good ſouls that will pity our caſe, and perhaps relieve us. Then I have a character, and a pair of hands. Things are bad, but they might have been worſe. I took my wife by the hand and knelt down. She did the ſame. I thanked God for his mercy in ſaving our lives, and prayed that he would continue to protect us. We

roſe up with lightened hearts, and were able to talk calmly about our condition. It was my deſire to return to my former maſter, the nurſery-man; but how to convey my family ſo far without money was the difficulty. Indeed I was much worſe than nothing, for I owed a good deal to my landlord. He came down upon the news of the misfortune, and though his own loſſes were heavy, he not only forgave my debt and releaſed me from all obligations, but made me a ſmall preſent. Some charitable neighbours did the like; but I was moſt of all affected by the kindneſs of our late maid-ſervant, who inſiſted upon our accepting of a crown which ſhe had ſaved out of her wages. Poor ſoul! we had always treated her like one of ourſelves, and ſhe felt for us like one.

As ſoon as we had got ſome neceſſaries, and the weather was tolerable, we ſet out on our long march.

My

My wife carried her infant in her arms. I took the bigger child upon my back, and a bundle of clothes in my hand. We could walk but a few miles a day, but we now and then got a lift in an empty waggon or cart, which was a great help to us. One day we met with a farmer returning with his team from market, who let us ride, and entered into converſation with me. I told him of my adventures, by which he ſeemed much intereſted; and learning that I was ſkilled in managing trees, he acquainted me that a nobleman in his neighbourhood was making great plantations, and would very likely be glad to engage me; and he offered to carry us to the place. As all I was ſeeking was a living by my labour, I thought the ſooner I got it, the better; ſo I thankfully accepted his offer. He took us to the nobleman's ſteward, and made known our caſe. The ſteward wrote to my old maſter for a character;

and receiving a favourable one, he hired me as a principal manager of a new plantation, and ſettled me and my family in a ſnug cottage near it. He advanced us ſomewhat for a little furniture and preſent ſubſiſtence; and we had once more a *home*. O Sir! how many bleſſings are contained in that word to thoſe who have known the want of it!

I entered upon my new employment with as much ſatisfaction, as if I was taking poſſeſſion of an eſtate. My wife had enough to do in taking care of the houſe and children; ſo it lay with me to provide for all, and I may ſay that I was not idle. Beſides my weekly pay from the ſteward, I contrived to make a little money at leiſure times by pruning and dreſſing gentlemen's fruit trees. I was allowed a piece of waſte ground behind the houſe for a garden, and I ſpent a good deal of labour in bringing it into

into order. My old master sent me down for a present some choice young trees and flower roots, which I planted, and they throve wonderfully. Things went on almost as well as I could desire. The situation being dry and healthy, my wife recovered her lost bloom, and the children sprung up like my plants. I began to hope that I was almost out of the reach of further misfortune; but it was not so ordered.

I had been three years in this situation, and increased my family with another child, when my Lord died. He was succeeded by a very dissipated young man, deep in debt, who presently put a stop to the planting and improving of the estate, and sent orders to turn off all the workmen. This was a great blow to me; however, I still hoped to be allowed to keep my little house and garden, and I thought I could then maintain myself

ſelf as a nurſery-man and gardener. But a new ſteward was ſent down, with directions to rack the tenants to the utmoſt. He aſked me as much rent for the place as if I had found the garden ready made to my hands; and when I told him it was impoſſible for me to pay it, he gave me notice to quit immediately. He would neither ſuffer me to take away my trees and plants, nor allow me any thing for them. His view, I found, was to put in a favourite of his own, and ſet him up at my expence. I remonſtrated againſt this cruel injuſtice, but could obtain nothing but hard words. As I ſaw it would be the ruin of me to be turned out in that manner, I determined, rather haſtily, to go up to London and plead my cauſe with my new Lord. I took a ſorrowful leave of my family, and walking to the next market town, I got a place on the outſide of the ſtage coach.

When

When we were within thirty or forty miles of London, the coachman overturned the carriage, and I pitched directly on my head, and was taken up ſenſeleſs. Nobody knew any thing about me; ſo I was carried to the next village, where the overſeer had me taken to the pariſh workhouſe. Here I lay a fortnight, much neglected, before I came to my ſenſes. As ſoon as I became ſenſible of my condition, I was almoſt diſtracted in thinking of the diſtreſs my poor wife, who was near lying-in, muſt be under on my account, not hearing any thing of me. I lay another fortnight before I was fit to travel, for, beſides the hurt on my head, I had a broken collar-bone, and ſeveral bruiſes. My money had ſomehow all got out of my pocket, and I had no other means of getting away than by being paſſed to my own pariſh. I returned in ſad plight indeed, and found my wife very ill in bed. My

children

children were crying about her, and almoſt ſtarving. We ſhould now have been quite loſt, had I not raiſed a little money by ſelling our furniture; for I was yet unable to work. As ſoon as my wife was ſomewhat recovered, we were forced to quit our houſe. I cried like a child on leaving my blooming garden and flouriſhing plantations, and was almoſt tempted to demoliſh them, rather than another ſhould unjuſtly reap the fruit of my labours. But I checked myſelf, and I am glad I did. We took lodgings in a neighbouring village, and I went round among the gentlemen of the country to ſee if I could get a little employment. In the mean time the former ſteward came down to ſettle accounts with his ſucceſſor, and was much concerned to find me in ſuch a ſituation. He was a very able and honeſt man, and had been engaged by another nobleman to ſu-

perintend a large improveable eſtate in a diſtant part of the kingdom. He told me, if I would try my fortune with him once more, he would endeavour to procure me a new ſettlement. I had nothing to loſe, and therefore was willing enough to run any hazard, but I was deſtitute of means to convey my family to ſuch a diſtance. My good friend, who was much provoked at the injuſtice of the new ſteward, ſaid ſo much to him, that he brought him to make me an allowance for my garden; and with that I was enabled to make another removal. It was to the place I now inhabit.

When I came here, Sir, all this farm was a naked common, like that you croſſed in coming. My Lord got an encloſure bill for his part of it, and the ſteward divided it into different farms, and let it on improving leaſes to ſeveral tenants.

A dreary

A dreary ſpot, to be ſure, it looked at firſt, enough to ſink a man's heart to ſit down upon it! I had a little unfiniſhed cottage given me to live in, and as I had nothing to ſtock a farm, I was for ſome years employed as head labourer and planter about the new encloſures. By very hard working and ſaving, together with a little help, I was at length enabled to take a ſmall part of the ground I now occupy. I had various diſcouragements, from bad ſeaſons and other accidents. One year the diſtemper carried off four out of ſeven cows that I kept; another year I loſt two of my beſt horſes. A high wind once almoſt entirely deſtroyed an orchard I had juſt planted, and blew down my biggeſt barn. But I was too much uſed to misfortunes to be eaſily diſheartened, and my way always was to ſet about repairing them in the beſt manner I could, and leave

the reſt to Heaven. This method ſeems to have anſwered at laſt. I have now gone on many years in a courſe of continued proſperity, adding field to field, increaſing my ſtock, and bringing up a numerous family with credit. My dear wife, who was my faithful partner through ſo much diſtreſs, continues to ſhare my proſperous ſtate; and few couples in the kingdom, I believe, have more cauſe to be thankful for their lot. This, Sir, is my hiſtory. You ſee it contains nothing very extraordinary; but if it impreſſes on the mind of this young gentleman the maxim, that patience and perſeverance will ſcarcely fail of a good iſſue in the end, the time you have ſpent in liſtening to it will not entirely be loſt.

Mr. *Carleton* thanked the good farmer very heartily for the amuſement and inſtruction he had afforded them, and took leave with many expreſſions

of regard. *Theodore* and he walked home, talking by the way of what they had heard.

Next morning, Mr. *C.* looking out of window, ſaw *Theodore* hard at work in his garden. He was carefully diſinterring his buried flowers, trimming and cleaning them, and planting them anew. He had got the gardener to cut a ſlip of the broken roſe-tree, and ſet it in the middle to give it a chance for growing. By noon every thing was laid ſmooth and neat, and the bed was well filled. All its ſplendour, indeed, was gone for the preſent, but it ſeemed in a hopeful way to revive again. *Theodore* looked with pleaſure over his work; but his father felt more pleaſure in witneſſing the firſt fruits of farmer *Hardman's* ſtory.

SEVENTEENTH EVENING.

ON METALS.

PART I.

George and *Harry*, with their Tutor, one day in their walk, were driven by the rain to take ſhelter in a blackſmith's ſhed. The ſhower laſting ſome time, the boys, in order to amuſe themſelves, began to examine the things around them. The great bellows firſt attracted their notice, and they admired the roaring it made, and the expedition with which it raiſed the fire to a heat too intenſe for them to look at. They were ſurpriſed at the dexterity with which the ſmith faſhioned a bar of iron into a horſeſhoe; firſt heating it, then hammering it well on the anvil, cutting off a proper length, bending it round,

round, turning up the ends, and laſtly, punching the nail-holes. They watched the whole proceſs of fitting it to the horſe's foot, and faſtening it on; and it had become fair ſome minutes before they ſhewed a deſire to leave the ſhop and proceed on their walk.

I could never have thought (ſays *George*, beginning the converſation) that ſuch a hard thing as iron could have been ſo eaſily managed.

Nor I neither, (ſaid *Harry*).

Tat. It was managed, you ſaw, by the help of fire. The fire made it ſoft and flexible, ſo that the ſmith could eaſily hammer it, and cut it, and bend it to the ſhape he wanted; and then dipping it in water, made it hard again.

G. Are all other metals managed in the ſame manner?

T. They are all worked by the help of fire in ſome way or other, either in melting them, or making them ſoft.

G. There are a good many ſorts of metals, are there not?

T. Yes, ſeveral; and if you have a mind I will tell you about them, and their uſes.

G. Pray do, Sir.

H. Yes; I ſhould like to hear it of all things.

T. Well, then. Firſt let us conſider what a metal is. Do you think you ſhould know one from a ſtone?

G. A ſtone!—Yes, I could not miſtake a piece of lead or iron for a ſtone.

T. How would you diſtinguiſh it?

G. A metal is bright and ſhining.

T. True—brilliance is one of their qualities. But glaſs and cryſtal are very bright, too.

H. But one may ſee through glaſs, and not through a piece of metal.

T. Right. Metals are brilliant, but opake, or not tranſparent. The thinneſt plate of metal that can be made, will

will keep out the light as effectually as a ſtone wall.

G. Metals are very heavy, too.

T. True. They are the heavieſt bodies in nature; for the lighteſt metal is nearly twice as heavy as the heavieſt ſtone. Well, what elſe?

G. Why, they will bear beating with a hammer, which a ſtone would not, without flying in pieces.

T. Yes; that property of extending or ſpreading under the hammer is called *malleability*; and another, like it, is that of bearing to be drawn out into a wire, which is called *ductility*. Metals have both theſe, and much of their uſe depends upon them.

G. Metals will melt, too.

H. What! will iron melt?

T. Yes; all metals will melt, though ſome require greater heat than others. The property of melting is called *fuſibility*. Do you know any thing more about them?

G. No; except that they come out of the ground, I believe.

T. That is properly added, for it is the circumſtance which makes them rank among *foſſils*, or minerals. To ſum up their character, then, a metal is a brilliant, opake, heavy, malleable, ductile, and fuſible mineral.

G. I think I can hardly remember all that.

T. The *names* may ſlip your memory, but you cannot ſee metals at all uſed without being ſenſible of the *things*.

G. But what are *ores*? I remember ſeeing a heap of iron ore which men were breaking with hammers, and it looked only like ſtones.

T. The *ore* of a metal is the ſtate in which it is generally met with in the earth, when it is ſo mixed with ſtony and other matters, as not to ſhow its proper qualities as a metal.

H. How do people know it, then?

T. By experience. It was probably accident that in the early ages discovered that certain fossils by the force of fire might be made to yield a metal. The experiment was repeated on other fossils; so that in length of time all the different metals were found out, and all the different forms in which they lie concealed in the ground. The knowledge of this is called *Mineralogy*, and a very important science it is.

G. Yes, I suppose so; for metals are very valuable things. Our next neighbour, Mr. Sterling, I have heard, gets a great deal of money every year from his mines in Wales.

T. He does. The mineral riches of some countries are much superior to that of their products above ground, and the revenues of many kings are in great part derived from their mines.

H. I suppose they must be gold and silver mines.

T. Those, to be sure, are the most valuable, if the metals are found in tolerable abundance. But do you know why they are so?

H. Because money is made of gold and silver.

T. That is a principal reason, no doubt. But these metals have intrinsic properties that make them highly valuable, else probably they would not have been chosen in so many countries to make money of. In the first place, gold and silver are both *perfect metals*, that is, indestructible in the fire. Other metals, if kept a considerable time in the fire, change by degrees into a powdery or scaly matter, called a calx. You have melted lead, I dare say.

C. Yes, often.

T. Have you not, then, perceived a drossy film collect upon its surface after it had been kept melting a while?

C. Yes.

G. Yes.

T. That is a calx, and in time the whole lead would change to such a substance. You may see, too, when you have heated the poker red-hot, some scales separate from it, which are brittle and drossy.

H. Yes—the kitchen poker is almost burnt away by putting it in the fire.

T. Well—All metals undergo these changes, except gold and silver, but these, if kept ever so long in the hottest fire, sustain no loss or change. They are therefore called *perfect metals*. Gold has several other remarkable properties. It is the heaviest of all metals.

H. What, is it heavier than lead?

T. Yes—above half as heavy again. It is between nineteen and twenty times heavier than an equal bulk of water. This great weight is a ready means of discovering counterfeit gold coin

from

from genuine; for as gold muſt be adulterated with ſomething much lighter than itſelf, a falſe coin, if of the ſame weight with the true, will be ſenſibly bigger. Gold, too, is the moſt ductile of all metals. You have ſeen leaf-gold?

G. Yes; I bought a book of it once.

T. Leaf-gold is made by beating a plate of gold placed between pieces of ſkin, with heavy hammers, till it is ſpread out to the utmoſt degree of thinneſs. And ſo great is its capacity for being extended, that a ſingle grain of the metal, which would be ſcarce bigger than a large pin's head, is beat out to a ſurface of fifty ſquare inches.

G. That is wonderful indeed! but I know leaf-gold muſt be very thin, for it will almoſt float upon the air.

T. By

T. By drawing gold out to a wire, it may be ſtill further extended. Gold-wire, as it is called, is made with ſilver, overlaid with a ſmall proportion of gold, and they are drawn out together. In the wire commonly uſed for laces, and embroidery, and the like, a grain of gold is made completely to cover a length of three hundred and fifty-two feet; and when it is ſtretched ſtill farther by flatting, it will reach four hundred and one feet.

H. Prodigious! What a vaſt way a guinea might be drawn out, then!

T. Yes; the gold of a guinea at that rate, would reach above nine miles and a half. This property in gold of being capable of extenſion to ſo extraordinary a degree, is owing to its great tenacity or coheſion of particles, which is ſuch, that you can ſcarcely break a piece of gold wire by twiſting it; and a wire of gold will ſuſtain a greater weight than

than one of any other metal, equally thick.

H. Then it would make very good wire for hanging bells.

T. It would; but ſuch bell-hanging would come rather too dear. Another valuable quality of gold is its fine colour. You know, ſcarce any thing makes a more ſplendid appearance than gilding. And a peculiar advantage of it is, that gold is not liable to ruſt or tarniſh as other metals are. It will keep its colour freſh for a great many years in a pure and clear air.

H. I remember the vane of the church ſteeple was new gilt two years ago, and it looks as well as at firſt.

T. This property of not ruſting would render gold very uſeful for a variety of purpoſes, if it were more common. It would make excellent cooking utenſils, water pipes, mathematical inſtruments, clock-work, and the like.

G. But

G. But is not gold ſoft? I have ſeen pieces of gold bent double.

T. Yes; it is next in ſoftneſs to lead, and therefore when it is made into coin, or uſed for any common purpoſes, it is mixed with a ſmall proportion of ſome other metal, in order to harden it. This is called its *alloy*. Our gold coin has one-twelfth part of alloy, which is a mixture of ſilver and copper.

G. How beautiful new gold coin is!

T. Yes—ſcarce any metal takes a ſtamp or impreſſion better; and it is capable of a very fine poliſh.

G. What countries yield the moſt gold?

T. South America, the Eaſt Indies, and the coaſt of Africa. Europe affords but little; yet a moderate quantity is got every year from Hungary.

G. I have read of rivers rolling ſands of gold. Is there any truth in that?

T. The

T. The poets, as uſual, have greatly exaggerated the matter; however, there are various ſtreams in different parts of the world, the ſands of which contain particles of gold, and ſome of them in ſuch quantity as to be worth the ſearch.

H. How does the gold come there?

T. It is waſhed down along with the ſoil from mountains by the torrents, which are the ſources of rivers. Some perſons ſay that all ſands contain gold; but I would not adviſe you to take the pains to ſearch for it in our common ſand; for in more ſenſes than one, *gold may be bought too dear.*

H. But what a fine thing it would be to find a gold mine on one's eſtate!

T. Perhaps not ſo fine as you imagine, for many a one does not pay the coſt of working. A coal pit would probably be a better thing. Who do you

you think are the greateſt gold-finders in Europe?

H. I don't know.

T. The gypſies in Hungary. A number of half-ſtarved, half-naked wretches of that community employ themſelves in waſhing and picking the ſands of ſome mountain-ſtreams in that country which contain gold, from which they obtain juſt profit enough to keep body and ſoul together; whereas, had they employed themſelves in agriculture or manufactures, they might have got a comfortable ſubſiſtence. Gold almoſt all the world over is firſt got by ſlaves, and it makes ſlaves of thoſe who poſſeſs much of it.

G. For my part, I will be content with a ſilver mine.

H. But we have none of thoſe in England, have we?

T. We have no ſilver mines properly ſo called, but ſilver is procured in

in ſome of our lead mines. There are, however, pretty rich ſilver mines in various parts of Europe; but the richeſt of all are in Peru, in South America.

G. Are not the famous mines of Potoſi there?

T. They are. Shall I now tell you ſome of the properties of ſilver?

G. By all means.

T. It is the other *perfect* metal. It is alſo as little liable to ruſt as gold, though indeed it readily gets tarniſhed.

H. Yes; I know our footman is often obliged to clean our plate before it is uſed.

T. Plate, however, is not made of pure ſilver, any more than ſilver coin, and ſilver utenſils of all kinds. An alloy is mixed with it, as with gold, to harden it; and that makes it more liable to tarniſh.

G. Bright

G. Bright ſilver, I think, is almoſt as beautiful as gold.

T. It is the moſt beautiful of the white metals, and is capable of a very fine poliſh; and this, together with its rarity, makes it uſed for a great variety of ornamental purpoſes. Then it is nearly as ductile and malleable as gold.

G. I have had ſilver-leaf, and it ſeemed as thin as gold-leaf.

T. It is nearly ſo. That is uſed for ſilvering, as gold-leaf is for gilding. It is common, too, to cover metals with a thin coating of ſilver, which is called plating.

H. The child's ſaucepan is ſilvered over on the inſide. What is that for?

T. To prevent the victuals from getting any taint from the metal of the ſaucepan: for ſilver is not capable of being corroded or diſſolved by any of the

the liquids uſed for food, as iron or copper are.

H. And that is the reaſon, I ſuppoſe, that fruit-knives are made of ſilver.

T. It is; but the ſoftneſs of the metal makes them bear a very poor edge.

G. Does ſilver melt eaſily?

T. Silver and gold both melt more difficultly than lead; not till they are above a common red heat. As to the weight of ſilver, it is nearly one half leſs than that of gold, being only eleven times heavier than water.

H. Is quickſilver a kind of ſilver?

T. It takes its name from ſilver, being very like it in colour; but in reality it is a very different thing, and one of the moſt ſingular of the metal kind.

G. It is not *malleable*, I am ſure.

T. No; when it is quick or fluid, as it always is in our climate. But a very great

great degree of cold makes it ſolid, and then it is malleable, like other metals.

G. I have heard of *killing* quickſilver; pray what does that mean?

T. It means deſtroying its property of running about, by mixing it with ſomewhat elſe. Thus, if quickſilver be well rubbed with fat, or oil, or gum, it unites with them, loſing all its metallic appearance and fluidity. It alſo unites readily with gold and ſilver, and ſeveral other metals, into the form of a kind of ſhining paſte, which is called an *amalgam*. This is one of the ways of gilding or ſilvering a thing. Your buttons are gilt by means of an amalgam.

G. How is that done?

T. The ſhells of the button, which are made of copper, are ſhaken in a hat with a lump of amalgam of gold and quickſilver, till they are all covered over with it. They are then put into a ſort

of

of frying-pan and held over the fire. The quickſilver, being very volatile in its nature, flies off in the form of a ſmoke or vapour when it is heated, leaving the gold behind it, ſpread over the ſurface of the button. Thus many dozen are gilt at once with the greateſt eaſe.

H. What a clever way! I ſhould like vaſtly to ſee it done.

T. You may ſee it any day at Birmingham, if you happen to be there; as well as a great many other curious operations on metals.

G. What a weight quickſilver is! I remember taking up a bottle full of it, and I had like to have dropt it again, it was ſo much heavier than I expected.

T. Yes, It is one of the heavieſt of the metals—about fifteen times heavier than water.

G. Is not *mercury* a name for quickſilver? I have heard them talk of the

the mercury rising and falling in the weather glass.

T. It is. You, perhaps, may have heard too of *mercurial medicines*, which are those made of quicksilver prepared in one manner or another.

G. What are they good for?

T. For a great variety of complaints. Your brother took some lately for the worms; and they are often given for breakings-out on the skin, and for sores and swellings. But they have one remarkable effect, when taken in a considerable quantity, which is, to loosen the teeth, and cause a great spitting. This is called salivation.

H. I used to think quicksilver was poison.

T. When it is in its common state of running quicksilver, it generally does neither good nor harm; but it may be prepared, so as to be a very violent medicine, or even a poison.

G. Is it useful for any thing else?

T. Yes—for a variety of purpoſes in the arts, which I cannot now very well explain to you. But you will perhaps be ſurpriſed to hear that one of the fineſt red paints is made from quickſilver.

G. A red paint!—which is that?

T. Vermilion, or cinnabar, which is a particular mixture of ſulphur with quickſilver.

H. Is quickſilver found in this country?

T. No. The greateſt quantity comes from Spain, Italy, and South America. It is a conſiderable object of commerce, and bears a high value, though much inferior to ſilver. Well—ſo much for metals at preſent. We will talk of the reſt on ſome future opportunity.

THE

THE PRICE OF A VICTORY.

Good news! great news! glorious news! cried young *Oswald*, as he entered his father's house. We have got a complete victory, and have killed I don't know how many thousands of the enemy; and we are to have bonfires and illuminations.

And so, said his father, you think that killing a great many thousands of human creatures is a thing to be very glad about.

O. No—I do not quite think so, neither; but surely it is right to be glad that our country has gained a great advantage.

F. No doubt, it is right to wish well to our country, as far as its prosperity can be promoted without injuring the rest of mankind. But wars are very seldom to the real advantage of any

nation; and when they are ever ſo uſeful or neceſſary, ſo many dreadful evils attend them, that a humane man will ſcarcely rejoice in them, if he conſiders at all on the ſubject.

Of. But if our enemies would do us a great deal of miſchief, and we prevent it by beating them, have not we a right to be glad of it?

F. Alas! we are in general little judges which of the parties has the moſt miſchievous intentions. Commonly they are both in the wrong, and ſucceſs will make both of them unjuſt and unreaſonable. But putting that out of the queſtion, he who rejoices in the event of a battle, rejoices in the miſery of many thouſands of his ſpecies; and the thought of that ſhould make him pauſe a little. Suppoſe a ſurgeon were to come with a ſmiling countenance, and tell us triumphantly that he had cut off half a dozen legs to day—what would you think of him?

Of. I

Q. I ſhould think him very hard-hearted.

F. And yet thoſe operations are done for the benefit of the ſufferers, and by their own deſire. But in a battle, the probability is, that none of thoſe engaged on either ſide have any intereſt at all in the cauſe they are fighting for, and moſt of them come there becauſe they cannot help it. In this battle that you are ſo rejoiced about, there have been ten thouſand men killed upon the ſpot, and nearly as many wounded.

Q. On both ſides.

F. Yes—but they are *men* on both ſides. Conſider now, that the ten thouſand ſent out of the world in this morning's work, though they are paſt feeling themſelves, have left probably two perſons each, on an average, to lament their loſs, either parents, wives, or children. Here are then twenty thouſand people made unhappy at one ſtroke on their account. This, however, is hardly

ſo dreadful to think of as the condition of the wounded. At the moment we are talking, eight or ten thouſand more are lying in agony, torn with ſhot or gaſhed with cuts, their wounds all feſtering, ſome hourly to die a moſt excruciating death, others to linger in torture weeks and months, and many doomed to drag on a miſerable exiſtence for the reſt of their lives, with diſeaſed and mutilated bodies.

C. This is ſhocking to think of, indeed!

F. When you light your candles, then, this evening, *think what they coſt.*

C. But every body elſe is glad, and ſeem to think nothing of theſe things.

F. True—they do *not* think of them. If they did, I cannot ſuppoſe they would be ſo void of feeling as to enjoy themſelves in merriment when ſo many of their fellow-creatures are made miſerable. Do you not remember when

poor *Dickens* had his leg broken to pieces by a loaded waggon, how all the town pitied him?

Os. Yes, very well. I could not sleep the night after for thinking of him.

F. But here are thousands suffering as much as he, and we scarce bestow a single thought on them. If any one of these poor creatures were before our eyes, we should probably feel much more than we now do for all together. Shall I tell you a story of a soldier's fortune, that came to my own knowledge?

Os. Yes—pray do!

F. In the village where I went to school, there was an honest industrious weaver and his wife, who had an only son, named *Walter*, just come to man's estate. *Walter* was a good and dutiful lad, and a clever workman, so that he was a great help to his parents. One unlucky day, having gone to the next

market town with ſome work, he met with a companion, who took him to the alehouſe and treated him. As he was coming away, a recruiting ſerjeant entered the room, who ſeeing *Walter* to be a likely young fellow, had a great mind to entrap him. He perſuaded him to ſit down again and take a glaſs with him; and kept him in talk with fine ſtories about a ſoldier's life, till *Walter* got ſuddled before he was aware. The ſerjeant then clapt a ſhilling in his hand to drink his majeſty's health, and told him he was enliſted. He was kept there all night, and next morning was taken before a magiſtrate to be ſworn in. *Walter* had now become ſober, and was very ſorry for what he had done; but he was told that he could not get off without paying a guinea ſmart-money. This he knew not how to raiſe; and being likewiſe afraid and aſhamed to face his friends, he took the oath and bounty money, and marched away with

the ſergeant without ever returning home. His poor father and mother, when they heard of the affair, were almoſt heart-broken; and a young woman in the village who was his ſweetheart, had like to have gone diſtracted. *Walter* ſent them a line from the firſt ſtage, to bid them farewell, and comfort them. He joined his regiment, which ſoon embarked for Germany, where it continued till the peace. *Walter* once or twice ſent word home of his welfare, but for the laſt year nothing was heard of him.

Q. Where was he then?

F. You ſhall hear. One ſummer's evening, a man in an old red coat, hobbling on crutches, was ſeen to enter the village. His countenance was pale and ſickly, his cheeks hollow, and his whole appearance beſpoke extreme wretchedneſs. Several people gathered round him, looking earneſtly in his face. Among theſe, a young woman, having gazed at him a

while, cried out, my *Walter!* and fainted away. *Walter* fell on the ground beside her. His father and mother being fetched by some of the spectators, came and took him in their arms, weeping bitterly. I saw the whole scene, and shall never forget it. At length the neighbours helped them into the house, where *Walter* told them the following story.

"At the last great battle that our troops gained in Germany, I was among the first engaged, and received a shot that broke my thigh. I fell, and presently after, our regiment was forced to retreat. A squadron of the enemy's horse came galloping down upon us. A trooper making a blow at me with his sabre as I lay, I lifted up my arm to save my head, and got a cut which divided all the sinews at the back of my wrist. Soon after, the enemy were driven back and came across us again. A horse set his foot on my side, and

broke

broke three of my ribs. The action was long and bloody, and the wounded on both sides were left on the field all night. A dreadful night it was to me, you may think! I had fainted through loss of blood, and when I recovered, I was tormented with thirst, and the cold air made my wounds smart intolerably. About noon next day, waggons came to carry away those who remained alive; and I, with a number of others, was put into one to be conveyed to the next town. The motion of the carriage was terrible for my broken bones—every jolt went to my heart. We were taken to an hospital, which was crammed as full as it could hold; and we should all have been suffocated with the heat and stench, had not a fever broke out, which soon thinned our numbers. I took it, and was twice given over; however, I struggled through. But my wounds proved so difficult to heal, that it was almost a twelvemonth be-

fore I could be diſcharged. A great deal of the bone of my thigh came away in ſplinters, and left the limb crooked and uſeleſs as you ſee. I entirely loſt the uſe of three fingers of my right hand; and my broken ribs made me ſpit blood a long time, and have left a cough and difficulty of breathing, which I believe will bring me to my grave. I was ſent home and diſcharged from the army, and I have begged my way hither as well as I could. I am told that the peace has left the affairs of my country juſt as they were before; but who will reſtore me my health and limbs? I am put on the liſt for a Chelſea penſioner, which will ſupport me, if I live to receive it, without being a burden to my friends. That is all that remains for *Walter* now!"

Of. Poor *Walter!* What became of him afterwards?

F. The wound of his thigh broke out afreſh, and diſcharged more ſplinters after

after a great deal of pain and fever. As winter came on, his cough increaſed. He waſted to a ſkeleton, and died the next ſpring. The young woman, his ſweetheart, ſat up with him every night to the laſt; and ſoon after his death ſhe fell into a conſumption, and followed him. The old people, deprived of the ſtay and comfort of their age, fell into deſpair and poverty, and were taken into the workhouſe, where they ended their days.

This was the hiſtory of *Walter the Soldier*. It has been that of thouſands more; and will be that of many a poor fellow over whoſe fate you are now rejoicing. Such is the *price of a Victory*.

EIGHTEENTH EVENING.

GOOD COMPANY.

BE SURE, *Frederick*, always keep *good company*, was the final admonition of Mr. *Lofty*, on dismissing his son to the university.

I intreat you, *Henry*, always to choose *good company*, said Mr. *Manly*, on parting with his son to an apprenticeship in a neighbouring town.

But it was impossible for two people to mean more differently by the same words.

In Mr. *Lofty*'s idea, good company was that of persons superior to ourselves in rank and fortune. By this alone he estimated it; and the degrees of comparison, better and best, were made exactly

exactly to correſpond to ſuch a ſcale. Thus, if an eſquire was *good* company, a baronet was *better*, and a lord, *beſt of all*, provided that he was not a *poor* lord, for in that caſe, a rich gentleman might be at leaſt as good. For as, according to Mr. *Lofty*'s maxim, the great purpoſe for which companions were to be choſen, was to advance a young man in the world by their credit and intereſt, thoſe were to be preferred, who afforded the beſt proſpects in this reſpect.

Mr. *Manly*, on the other hand, underſtood by *good* company, that which was improving to the morals and underſtanding; and by the *beſt*, that which to a high degree of theſe qualities, added true politeneſs of manners. As ſuperior advantages in education to a certain point accompany ſuperiority of condition, he wiſhed his ſon to prefer as companions thoſe whoſe ſituation in life had afforded them the opportunity of being well educated; but he was far from

deſiring him to ſhun connections with worth and talents, wherever he ſhould find them.

Mr. *Lofty* had an utter averſion to *low company*, by which he meant inferiors, people of no faſhion and figure, ſhabby fellows, whom nobody knows.

Mr. *Manly* equally diſliked *low company*, underſtanding by it perſons of mean habits and vulgar converſation.

A great part of Mr. *Manly*'s good company, was Mr. *Lofty*'s low company; and not a few of Mr. *Lofty*'s very beſt company, were Mr. *Manly*'s very worſt.

Each of the ſons underſtood his father's meaning, and followed his advice.

Frederick, from the time of his entrance at the Univerſity, commenced what is called a *Tuft-hunter*, from the tuft in the cap worn by young noblemen. He took pains to inſinuate himſelf into the good graces of all the young men of high faſhion in his college,

lege, and became a conſtant companion in their ſchemes of frolic and diſſipation. They treated him with an inſolent familiarity, often bordering upon contempt; but following another maxim of his father's, "one muſt ſtoop to riſe," he took it all in good part. He totally neglected ſtudy, as unneceſſary, and indeed inconſiſtent with his plan. He ſpent a great deal of money, with which his father, finding that it went in *good company*, at firſt ſupplied him freely. In time, however, his expences amounted to ſo much, that Mr. *Lofty*, who kept good company too, found it difficult to anſwer his demands. A conſiderable ſum that he loſt at play with one of his noble friends, increaſed the difficulty. If it were not paid, the diſgrace of not having diſcharged a *debt of honour* would loſe him all the favour he had acquired; yet the money could not be raiſed without greatly embarraſſing his father's affairs.

In

In the midſt of this perplexity, Mr. *Lofty* died, leaving behind him a large family, and very little property. *Frederick* came up to town, and ſoon diſſipated in *good company* the ſcanty portion that came to his ſhare. Having neither induſtry, knowledge, nor reputation, he was then obliged to become an humble dependent on the great, flattering all their follies, and miniſtring to their vices, treated by them with mortifying neglect, and equally deſpiſed and deteſted by the reſt of the world.

Henry, in the mean time, entered with ſpirit into the buſineſs of his new profeſſion, and employed his leiſure in cultivating an acquaintance with a few ſelect friends. Theſe were partly young men in a ſituation ſimilar to his own, partly perſons already ſettled in life, but all diſtinguiſhed by propriety of conduct, and improved underſtandings. From all of them he learned ſomewhat valuable; but he was more particularly

indebted

indebted to two of them, who were in a ſtation of life inferior to that of the reſt. One was a watchmaker, an excellent mechanic and tolerable mathematician, and well acquainted with the conſtruction and uſe of all the inſtruments employed in experimental philoſophy. The other was a young druggiſt, who had a good knowledge of chymiſtry, and frequently employed himſelf in chymical operations and experiments. Both of them were men of very decent manners, and took a pleaſure in communicating their knowledge to ſuch as ſhewed a taſte for ſimilar ſtudies. *Henry* frequently viſited them, and derived much uſeful information from their inſtructions, for which he ever expreſſed great thankfulneſs. Theſe various occupations and good examples effectually preſerved him from the errors of youth, and he paſſed his time with credit and ſatisfaction. He had the ſame misfortune with *Frederick*, juſt as he was ready

to

to come out into the world, of loſing his father, upon whom the ſupport of the family chiefly depended; but in the character he had eſtabliſhed, and the knowledge he had acquired, he found an effectual reſource. One of his young friends propoſed to him a partnerſhip in a manufacture he had juſt ſet up at conſiderable expence, requiring for his ſhare only the exertion of his talents and induſtry. *Henry* accepted the offer, and made ſuch good uſe of the ſkill in mechanics and chymiſtry he had acquired, that he introduced many improvements into the manufactory, and rendered it a very profitable concern. He lived proſperous and independent, and retained in manhood all the friendſhips of his youth.

THE

THE DOG BAULKED OF HIS DINNER.

A TALE.

THINK yourself sure of nothing till you've got it:
This is the leſſon of the day.
In metaphoric language I might ſay,
Count not your bird before you've ſhot it.
Quoth proverb, "'twixt the cup and lip
There's many a ſlip."
Not every gueſt invited ſits at table,
So ſays *my* fable.

A man once gave a dinner to his friend;
His friend!—his patron I ſhould rather think,
By all the loads of meat and drink,
And fruits and jellies without end,
Sent home the morning of the feaſt.
Fowler, his dog, a ſocial beaſt,
Soon as he ſmelt the matter out, away
Scampers to old acquaintance *Tray*,
And with expreſſions kind and hearty,
Invites him to the party.

Tray wanted little preſſing to a dinner:
He was, in truth, a gormandizing ſinner.
He lick'd his chops and wagg'd his tail;
Dear friend! (he cried) I will not fail:

But

But what's your hour?
We dine at four.
But if you come an hour too soon,
You'll find there's something to be done.

His friend withdrawn, Tray, full of glee,
As blithe as blithe could be,
Skipt, danc'd, and play'd full many an antic,
Like one half frantic.
Then sober in the sun lay winking,
But could not sleep for thinking.
He thought o'er every dainty dish,
Fried, boil'd, and roast,
Flesh, fowl, and fish,
With tripes and roast,
Fit for a dog to eat,
And in his fancy made a treat,
Might grace a bill of fare,
For my Lord Mayor.

At length, just on the stroke of three,
Forth sallied he;
And thro' a well-known hole
He slily stole
Pop on the scene of action.
Here he beheld with wondrous satisfaction,
All hands employ'd in drawing, stuffing,
Skewering, spitting, and basting,
The red-fac'd cook sweating and puffing,
Chopping, mixing, and tasting.

Tray

Tray skulk'd about, now here, now there,
And peep'd in this, and smelt at that,
And lick'd the gravy and the fat,
And cried, O rare! how I shall fare!

But Fortune, spiteful as Old Nick,
Resolv'd to play our dog a trick.
She made the cook
Just cast a look,
Where *Tray* beneath the dresser lying
His promis'd bliss was eyeing.

A cook while cooking is a sort of fury,
A maxim worth rememb'ring, I assure ye.
Tray found it true,
And so may you,
If e'er you chuse to try.
How now! (quoth she) what's this I spy?
A nasty cur! who let him in?
Would he were hang'd with all his kin!
A pretty kitchen guest indeed!
But I shall pack him off with speed.

So saying, on poor *Tray* she flew,
And dragg'd the culprit forth to view,
Then, to his terror and amazement,
Whirl'd him like lightning thro' the casement.

THE UMBELLIFEROUS PLANTS.

Tutor—George—Harry.

H. What plant is that man gathering under the hedge?

G. I don't know; but boys call the ſtalks kexes, and blow through them.

H. I have ſeen them; but I want to know the plant.

G. Will you pleaſe to tell us, Sir, what it is.

T. It is hemlock.

G. Hemlock is poiſon, is it not?

T. Yes, in ſome degree; and it is alſo a medicine. That man is gathering it for the apothecaries.

H. I ſhould like to know it.

T. Well then—go and bring one.

[Harry *fetches it.*

G. I think I have ſeen a great many of this ſort.

T. Perhaps you may; but there are many other kinds of plants extremely like it. It is one of a large family called the *umbelliferous*, which contains both food, phyſic, and poiſon. It will be worth while for you to know ſomething about them, ſo let us examine this hemlock cloſely. You ſee this tall hollow ſtalk, which divides into ſeveral branches, from each of which ſpring ſpokes or *rundles* as they are called, of flower-ſtalks. You ſee they are like rays from a circle, or the ſpokes of a wheel.

H. Or like the ſticks of an umbrella.

T. True; and they are called *umbels*, which has the ſame derivation.—If you purſue one of theſe rundles or umbels, you will find that each ſtick or ſpoke terminates in another ſet of ſmaller ſtalks, each of which bears a ſingle ſmall flower.

G. They are ſmall ones indeed.

T. But if you look ſharply, I dare ſay your eyes are good enough to diſtinguiſh that they are divided into five leaves, and furniſhed with five chives, and two piſtils in the middle.

H. I can ſee them.

C. And ſo can I.

T. The piſtils are ſucceeded by a ſort of fruit, which is a twin ſeed joined in the middle, as you may ſee in this rundle that is paſt flowering. Here I divide one of them into two.

C. Would each of theſe grow?

T. Yes. Well—this is the ſtructure of the flowering part of all the umbelliferous tribe. Now for the leaf. Pluck one.

H. Is this one leaf, or many?

T. It is properly one, but it is cut and divided into many portions. From this mid-rib ſpring ſmaller leaves ſet oppoſite each other; and from the rib of each of theſe, proceed others, which

which themselves are also divided. These are called doubly or trebly pinnated leaves; and most of the umbelliferous plants, but not all, have leaves of this kind.

H. It is like a parsley leaf.

T. True—and parsley is one of the same tribe, and hemlock and others are sometimes mistaken for it.

G. How curiously the stalk of this hemlock is spotted!

T. Yes.—That is one of the marks by which it is known. It is also distinguished by its peculiar smell, and by other circumstances which you can only understand when you have compared a number of the tribe. I will now tell you about some others, the names of which you are probably acquainted with. In the first place, there are carrots and parsnips.

H. Carrots and parsnips!—they are not poisons, I am sure.

G. I remember, now, that carrots have ſuch a leaf as this.

T. They have. It is the *roots* of theſe, you know, that are eaten. But we eat the *leaves* of parſley and fennel, which are of the ſame claſs. Celery is another, the *ſtalks* of which are chiefly uſed, made white by trenching up the earth about them. The ſtalks of Angelica are uſed differently.

H. I know how—candied.

T. Yes. Then there are many, of which the *ſeeds* are uſed. There is carraway.

H. What, the ſeeds that are put in cakes and comfits?

T. Yes. They are warm and pungent to the taſte; and ſo are the ſeeds of many others of the umbelliferous plants, as coriander, fennel, wild carrot, angelica, aniſe, cummin, and dill. All theſe are employed in food or medicine, and are good for warming or ſtrengthening the ſtomach.

G. Thoſe

G. Thoſe are pleaſant medicines enough.

T. They are; but you will not ſay the ſame of ſome others of the claſs, which are noted medicines, too; ſuch as the plant yielding aſafetida, and ſeveral more, from which what are called the fetid gums are produced.

G. Aſafetida!—that's naſty ſtuff, I know; does it grow here?

T. No; and moſt of the ſweet ſeeds I before mentioned come from abroad, too. Now I will tell you of ſome of the poiſons.

H. Hemlock is one that we know already.

T. Yes. Then there is another kind that grows in water, and is more poiſonous, called Water-Hemlock. Another is a large plant growing in ditches, with leaves extremely like celery, called Hemlock-Dropwort. Another, common in drier ſituations, and diſtinguiſhed by leaves leſs di-

vided than moſt of the claſs, is Cow-Parſnep, or Madnep. Of ſome of theſe the leaves, of others the roots, are moſt poiſonous. Their effects are to make the head giddy, bring on ſtupidity or delirium, and cauſe violent ſickneſs. The Athenians uſed to put criminals to death by making them drink the juice of a kind of hemlock growing in that country, as you may read in the life of that excellent philoſopher Socrates, who was killed in that manner.

H. What was he killed for?

T. Becauſe he was wiſer and better than his fellow-citizens. Among us it is only by accident that miſchief is done by theſe plants. I remember a melancholy inſtance of a poor boy, who in rambling about the fields with his little brothers and ſiſters, chanced to meet with a root of Hemlock-Dropwort. It looked ſo white and nice, that he was tempted to eat a good deal of it.

The

The other children alſo eat ſome, but not ſo much. When they got home they were all taken very ill. The eldeſt boy, who had eat moſt, died in great agony. The others recovered, after ſuffering a great deal.

G. Is there any way of preventing their bad effects?

T. The beſt way is to clear the ſtomach as ſoon as poſſible by a ſtrong vomic and large draughts of warm water. After that, vinegar is uſeful in removing the diſorder of the head.

H. But are the roots ſweet or pleaſant, that people ſhould be tempted to eat them.

T. Several of them are. There is a ſmall plant of the tribe, the root of which is much ſought after by boys, who dig for it with their knives. It is round, and called earth-nut, or pig-nut.

G. But that is not poiſon, I ſuppoſe.

T. No, but it is not very wholesome. I believe, however, that the roots of the most poisonous become innocent by boiling. I have heard that boiled hemlock roots are as good as carrots.

H. I think I should not like to eat them, however. But pray why should there be any poisons at all?

T. What we call poisons are only hurtful to particular animals. They are the proper food of others, and no doubt do more good than hurt in the creation. Most of the things that are poisonous to us in large quantities, are useful medicines in small ones; and we have reason bestowed upon us, to guard us against mischief. Other animals in general refuse by instinct what would prove hurtful to them. You see beneath yonder hedge a great crop of tall flourishing plants with white flowers. They are of the umbelliferous family, and are called wild Cicely or Cowweed. The latter name is given them,

them, because the cows will not touch them, though the pasture be ever so bare.

H. Would they poison them?

T. Perhaps they would; at least they are not proper food for them. We will go and examine them, and I will shew you how they differ from hemlock, for which they are sometimes mistaken.

G. I should like to get some of these plants and dry them.

T. You shall, and write down the names of them all, and learn to know the innocent from the hurtful.

G. That will be very useful.

T. It will. Remember now the general character of the umbelliferous class. The flower-stalks are divided into spokes or umbels, which are again divided into others, each of them terminated by a small five-leaved flower, having five chives and two pistils, suc-

seeded by a twin seed. Their leaves are generally finely divided. You will soon know them after having examined two or three of the tribe. Remember, too, that they are a *suspicious race*, and not to be made free with till you are well acquainted with them.

THE KID.

One bleak day in March, *Sylvia* returning from a visit to the sheep-fold, met with a young kidling deserted by its dam on the naked heath. It was bleating piteously, and was so benumbed with the cold, that it could scarcely stand. *Sylvia* took it up in her arms and pressed it close to her bosom. She hastened home, and showing her little foundling to her parents, begged she might rear it for her own. They consented;

ferted; and *Sylvia* immediately got a baſket full of clean ſtraw, and made a bed for him on the hearth. She warmed ſome milk, and held it to him in a platter. The poor creature drank it up eagerly, and then licked her hand for more. *Sylvia* was delighted. She chafed his ſlender legs with her warm hands, and ſoon ſaw him jump out of his baſket, and friſk acroſs the room. When full, he lay down again and took a comfortable nap.

The next day the kid had a name beſtowed upon him. As he gave tokens of being an excellent jumper, it was *Capriole*. He was introduced to all the reſt of the family, and the younger children were allowed to ſtroke and pat him; but *Sylvia* would let nobody be intimate with him but herſelf. The great maſtiff was charged never to hurt him, and indeed he had no intention to do it.

Within a few days, *Capriole* followed *Sylvia* all about the house, trotted by her side into the yard, ran races with her in the home field, fed out of her hand, and was a declared pet and favourite. As the spring advanced, *Sylvia* roamed in the fields and gathered wild flowers, with which she wove garlands, and hung them around her kid's neck. He could not be kept, however, from munching his finery when he could reach it with his mouth. He was likewise rather troublesome in thrusting his nose into the meal-tub and flour-box, and following people into the dairy, and sipping the milk that was set for cream. He now and then got a blow for his intrusion, but his mistress always took his part, and indulged him in every liberty.

Capriole's horns now began to bud, and a little white beard sprouted at the end of his chin. He grew bold enough to put himself in a fighting posture

ture whenever he was offended. He butted down little *Colin* into the dirt, quarrelled with the geese for their allowance of corn, and held many a stout battle with the old turkey-cock. Every body said, *Capriole* is growing too saucy, he must be sent away, or taught better manners. But *Sylvia* still stood his friend, and he repaid her love with many tender caresses.

The farm-house where *Sylvia* lived was situated in a sweet valley, by the side of a clear stream, bordered with trees. Above the house rose a sloping meadow, and beyond that was an open common, covered with purple heath and yellow furze. Further on, at some distance, rose a steep hill, the summit of which was a bare craggy rock, scarcely accessible to human feet. *Capriole*, ranging at his pleasure, often got upon the common, and was pleased with browzing the short grass and wild herbs which grew there. Still, however,

when his mistress came to seek him, he would run bounding at her call, and accompany her back to the farm.

One fine summer's day, *Sylvia*, after having finished the business of the morning, wanted to play with her kid; and missing him, she went to the side of the common, and called aloud *Capriole! Capriole!* expecting to see him come running to her as usual. No *Capriole* came. She went on and on, still calling her kid with the most endearing accents, but nothing was to be seen of him. Her heart began to flutter. What can be become of him? Surely somebody must have stolen him,—or perhaps the neighbour's dogs have worried him. Oh my poor *Capriole!* my dear *Capriole!* I shall never see you again!—and *Sylvia* began to weep.

She still went on, and looking wistfully all around, and making the place echo with *Capriole, Capriole!* where are you my *Capriole?* till at length she came

came to the foot of the steep hill. She climbed up its sides to get a better view. No kid was to be seen. She sat down, and wept, and wrung her hands. After a while, she fancied she heard a bleating like the well-known voice of her *Capriole*. She started up, and looked towards the sound, which seemed a great way over head. At length she spied, just on the edge of a steep crag, her *Capriole* peeping over. She stretched out her hands to him, and began to call, but with a timid voice, left in his impatience to return to her, he should leap down and break his neck. But there was no such danger. *Capriole* was inhaling the fresh breeze of the mountains, and enjoying with rapture the scenes for which nature designed him. His bleating was the expression of joy, and he bestowed not a thought on his kind mistress, nor paid the least attention to her call. *Sylvia* ascended as high as she could towards him, and called louder

and

and louder, but all in vain. *Capriole* leaped from rock to rock, cropt the fine herbage in the clefts, and was quite loſt in the pleaſure of his new exiſtence.

Poor *Sylvia* ſtaid till ſhe was tired, and then returned diſconſolate to the farm to relate her misfortune. She got her brothers to accompany her back to the hill, and took with her a ſlice of white bread and ſome milk to tempt the little wanderer home. But he had mounted ſtill higher, and had joined a herd of companions of the ſame ſpecies, with whom he was friſking and ſporting. He had neither eyes nor ears for his old friends of the valley. All former habits were broken at once, and he had commenced free commoner of nature. *Sylvia* came back, crying as much from vexation as ſorrow. The little ungrateful thing! (ſaid ſhe)—ſo well as I loved him, and ſo kindly as I treated him, to deſert

desert me in this way at last!—But he was always a rover!

Take care then, *Sylvia*, (said her mother) how you set your heart upon *rovers* again!

HOW TO MAKE THE BEST OF IT.

Robinet, a peasant of Lorrain, after a hard day's work at the next market-town, was returning home with a basket in his hand. What a delicious supper shall I have! (said he to himself.) This piece of kid well stewed down, with my onions sliced, thickened with my meal, and seasoned with my salt and pepper, will make a dish fit for the bishop of the diocese. Then I have a good piece of a barley loaf at home to finish with. How I long to be at it!

A noise in the hedge now attracted his notice, and he spied a squirrel nimbly

bly running up a tree, and popping into a hole between the branches. Ha! (thought he) what a nice present a neſt of young ſquirrels will be to my little maſter! I'll try if I can get it. Upon this, he ſet down his baſket in the road, and began to climb up the tree. He had half aſcended, when caſting a look at his baſket, he ſaw a dog with his noſe in it, ferreting out the piece of kid's fleſh. He made all poſſible ſpeed down, but the dog was too quick for him, and ran off with the meat in his mouth. *Robinet* looked after him—Well, (ſaid he) then I muſt be content with ſoup-meagre—and no bad thing neither!

He travelled on, and came to a little public houſe by the road ſide, where an acquaintance of his was ſitting on a bench drinking. He invited *Robinet* to take a draught. *Robinet* ſeated himſelf by his friend, and ſet his baſket on the bench cloſe by him. A tame raven,

raven, which was kept at the houſe, came ſlily behind him, and perching on the baſket, ſtole away the bag in which the meal was tied up, and hopped off with it to his hole. *Robinet* did not perceive the theft till he had got on his way again. He returned to ſearch for his bag, but could hear no tidings of it. Well, (ſays he) my ſoup will be the thinner, but I will boil a ſlice of bread with it, and that will do it ſome good at leaſt.

He went on again, and arrived at a little brook, over which was laid a narrow plank. A young woman coming up to paſs at the ſame time, *Robinet* gallantly offered her his hand. As ſoon as ſhe was got to the middle, either through fear or ſport, ſhe ſhrieked out, and cried ſhe was falling. *Robinet* haſtening to ſupport her with his other hand, let his baſket drop into the ſtream. As ſoon as ſhe was ſafe over, he jumped in and recovered it, but when he took it

out,

out, he perceived that all the ſalt was melted, and the pepper waſhed away. Nothing was now left but the onions. Well! (ſays *Robinet*) then I muſt ſup to-night upon roaſted onions and barley bread. Laſt night I had the bread alone. To-morrow morning it will not ſignify what I had. So ſaying, he trudged on, ſinging as before.

NINETEENTH EVENING.

EYES, AND NO EYES;

OR,

THE ART OF SEEING.

WELL, *Robert*, where have you been walking this afternoon? (said Mr. *Andrews* to one of his pupils at the close of a holiday.)

R. I have been, Sir, to Broom-heath, and so round by the windmill upon Camp-mount, and home through the meadows by the river side.

Mr. *A.* Well, that's a pleasant round.

R. I thought it very dull, Sir; I scarcely met with a single person. I had rather by half have gone along the turnpike road.

Mr. *A.*

Mr. *A.* Why, if ſeeing men and horſes is your object, you would, indeed, be better entertained on the high-road. But did you ſee *William*?

R. We ſet out together, but he lagged behind in the lane, ſo I walked on and left him.

Mr. *A.* That was a pity. He would have been company for you.

R. O, he is ſo tedious, always ſtopping to look at this thing and that! I had rather walk alone. I dare ſay he is not got home yet.

Mr. *A.* Here he comes. Well, *William*, where have you been?

W. O, Sir, the pleaſanteſt walk! I went all over Broom-heath, and ſo up to the mill at the top of the hill, and then down among the green meadows by the ſide of the river.

Mr. *A.* Why, that is juſt the round *Robert* has been taking, and he complains of its dullneſs, and prefers the high-road.

W. I wonder at that, I am ſure I hardly took a ſtep that did not delight me, and I have brought my handkerchief full of curioſities home.

Mr. *H.* Suppoſe, then, you give us ſome account of what amuſed you ſo much. I fancy it will be as new to *Robert* as to me.

W. I will, Sir. The lane leading to the heath, you know, is cloſe and ſandy, ſo I did not mind it much, but made the beſt of my way. However, I ſpied a curious thing enough in the hedge. It was an old crab-tree, out of which grew a great bunch of ſomething green, quite different from the tree itſelf. Here is a branch of it.

Mr. *H.* Ah! this is Miſſeltoe, a plant of great fame for the uſe made of it by the Druids of old in their religious rites and incantations. It bears a very ſlimy white berry, of which birdlime may be made, whence its Latin name of *Viſcus*. It is one of thoſe plants

which

which do not grow in the ground by a root of their own, but fix themselves upon other plants; whence they have been humorously ſtyled *paraſitical*, as being hangers on, or dependants. It was the miſſeltoe of the oak that the Druids particularly honoured.

W. A little further on I ſaw a green woodpecker fly to a tree, and run up the trunk like a cat.

Mr. *A.* That was to ſeek for inſects in the bark, on which they live. They bore holes with their ſtrong bills for that purpoſe, and do much damage to the trees by it.

W. What beautiful birds they are!

Mr. *A.* Yes; they have been called, from their colour and ſize, the Engliſh parrot.

W. When I got upon the open heath, how charming it was! The air ſeemed ſo freſh, and the proſpect on every ſide ſo free and unbounded! Then it was all covered with gay flowers, many

many of which I had never observed before. There were at least three kinds of heath (I have got them in my handkerchief here), and gorse, and broom, and bell-flower, and many others of all colours, that I will beg you presently to tell me the names of.

Mr. *A.* That I will, readily.

W. I saw, too, several birds that were new to me. There was a pretty greyish one, of the size of a lark, that was hopping about some great stones; and when he flew, he showed a great deal of white above his tail.

Mr. *A.* That was a wheat-ear. They are reckoned very delicious birds to eat, and frequent the open downs in Sussex, and some other counties, in great numbers.

W. There was a flock of lapwings upon a marshy part of the heath, that amused me much. As I came near them, some of them kept flying round and round just over my head, and crying

peewit so distinctly, one might almost fancy they spoke. I thought I should have caught one of them, for he flew as if one of his wings was broken, and often tumbled close to the ground; but as I came near, he always made a shift to get away.

Mr. A. Ha, ha! you were finely taken in, then! This was all an artifice of the bird's to entice you away from its nest: for they build upon the bare ground, and their nests would easily be observed, did not they draw off the attention of intruders by their loud cries and counterfeit lameness.

W. I wish I had known that, for he led me a long chase, often over shoes in water. However, it was the cause of my falling in with an old man and a boy who were cutting and piling up turf for fewel, and I had a good deal of talk with them about the manner of preparing the turf, and the price it sells at. They gave me, too, a creature I never saw

saw before—a young viper, which they had just killed, together with its dam. I have seen several common snakes, but this is thicker in proportion, and of a darker colour than they are.

Mr. *A.* True. Vipers frequent those turfy boggy grounds pretty much, and I have known several turf-cutters bitten by them.

W. They are very venomous, are they not?

Mr. *A.* Enough to make their wounds painful and dangerous, though they seldom prove fatal.

W. Well—I then took my course up to the windmill on the mount. I climbed up the steps of the mill in order to get a better view of the country round. What an extensive prospect! I counted fifteen church steeples, and I saw several gentlemen's houses peeping out from the midst of green woods and plantations; and I could trace the windings of the river all along the low

grounds, till it was loſt behind a ridge of hills. But I'll tell you what I mean to do, Sir, if you will give me leave.

Mr. *A.* What is that?

W. I will go again, and take with me Carey's county map, by which I ſhall probably be able to make out moſt of the places.

Mr. *A.* You ſhall have it, and I will go with you, and take my pocket ſpying glaſs.

W. I ſhall be very glad of that. Well—a thought ſtruck me, that as the hill is called *Camp-mount*, there might probably be ſome remains of ditches and mounds with which I have read that camps were ſurrounded. And I really believe I diſcovered ſomething of that ſort running round one ſide of the mount.

Mr. *A.* Very likely you might. I know antiquaries have deſcribed ſuch remains as exiſting there, which ſome ſuppoſe to be Roman, others Daniſh.

We

We will examine them further when we go.

W. From the hill I went ſtraight down to the meadows below, and walked on the ſide of a brook that runs into the river. It was all bordered with reeds and flags and tall flowering plants, quite different from thoſe I had ſeen on the heath. As I was getting down the bank to reach one of them, I heard ſomething plunge into the water near me. It was a large water-rat, and I ſaw it ſwim over to the other ſide, and go into its hole. There were a great many large dragon-flies all about the ſtream. I caught one of the fineſt, and have got him here in a leaf. But how I longed to catch a bird that I ſaw hovering over the water, and every now and then darting down into it! It was all over a mixture of the moſt beautiful green and blue with ſome orange colour. It was ſomewhat leſs than a thruſh,

and had a large head and bill, and a short tail.

Mr. *A.* I can tell you what that bird was—a kingfisher, the celebrated halcyon of the ancients, about which so many tales are told. It lives on fish, which it catches in the manner you saw. It builds in holes in the banks, and is a shy retired bird, never to be seen far from the stream where it inhabits.

W. I must try to get another sight of him, for I never saw a bird that pleased me so much. Well—I followed this little brook till it entered the river, and then took the path that runs along the bank. On the opposite side I observed several little birds running along the shore, and making a piping noise. They were brown and white, and about as big as a snipe.

Mr. *A.* I suppose they were sandpipers, one of the numerous family of birds that get their living by wading

among the shallows, and picking up worms and insects.

W. There were a great many swallows, too, sporting upon the surface of the water, that entertained me with their motions. Sometimes they dashed into the stream, sometimes they pursued one another so quick, that the eye could scarcely follow them. In one place, where a high steep sand-bank rose directly above the river, I observed many of them go in and out of holes with which the bank was bored full.

Mr. A. Those were sand-martins, the smallest of our four species of swallows. They are of a mouse-colour above, and white beneath. They make their nests and bring up their young in these holes, which run a great depth, and by their situation are secure from all plunderers.

W. A little further I saw a man in a boat, who was catching eels in an odd way. He had a long pole with

broad iron prongs at the end, juſt like Neptune's trident, only there were five inſtead of three. This he puſhed ſtraight down among the mud in the deepeſt parts of the river, and fetched up the eels ſticking between the prongs.

Mr. *A.* I have ſeen this method. It is called ſpearing of eels.

W. While I was looking at him, a heron came flying over my head, with his large flagging wings. He lit at the next turn of the river, and I crept ſoftly behind the bank to watch his motions. He had waded into the water as far as his long legs would carry him, and was ſtanding with his neck drawn in, looking intently on the ſtream. Preſently he darted his long bill as quick as lightning into the water, and drew out a fiſh, which he ſwallowed. I ſaw him catch another in the ſame manner. He then took alarm at ſome noiſe I made, and flew away ſlowly to a wood at ſome diſtance, where he ſettled.

Mr.

Mr. *A.* Probably his neſt was there, for herons build upon the loftieſt trees they can find, and ſometimes in ſociety together, like rooks. Formerly, when theſe birds were valued for the amuſement of hawking, many gentlemen had their *heronries*, and a few are ſtill remaining.

W. I think they are the largeſt wild birds we have.

Mr. *A.* They are of a great length and ſpread of wing, but their bodies are comparatively ſmall.

W. I then turned homeward acroſs the meadows, where I ſtopt awhile to look at a large flock of ſtarlings which kept flying about at no great diſtance. I could not tell at firſt what to make of them; for they roſe all together from the ground as thick as a ſwarm of bees, and formed themſelves into a kind of black cloud hovering over the field. After taking a ſhort round, they ſettled again, and preſently roſe again

in the same manner. I dare say there were hundreds of them.

Mrs. A. Perhaps so; for in the fenny countries their flocks are so numerous, as to break down whole acres of reeds by settling on them. This disposition of starlings to fly in close swarms was remarked even by Homer, who compares the foe flying from one of his heroes, to a cloud of starlings retiring dismayed at the approach of the hawk.

M. After I had left the meadows, I crossed the corn fields in the way to our house, and passed close by a deep marle pit. Looking into it, I saw in one of the sides a cluster of what I took to be shells; and upon going down, I picked up a clod of marle, which was quite full of them; but how sea shells could get there, I cannot imagine.

Mrs. A. I do not wonder at your surprise, since many philosophers have been much perplexed to account for the same appearance. It is not uncommon

to

to find great quantities of shells and relics of marine animals even in the bowels of high mountains, very remote from the sea. They are certainly proofs that the earth was once in a very different state from what it is at present; but in what manner and how long ago these changes took place, can only be guessed at.

W. I got to the high field next our house just as the sun was setting, and I stood looking at it till it was quite lost. What a glorious sight! The clouds were tinged purple and crimson and yellow of all shades and hues, and the clear sky varied from blue to a fine green in the horizon. But how large the sun appears just as it sets! I think he seems twice as big as when it is over head.

Mr. *A.* It does so; and you may probably have observed the same apparent enlargement of the moon at its rising.

W. I

W. I have; but pray what is the reason of this?

Mr. *A.* It is an optical deception, depending upon principles which I cannot well explain to you till you know more of that branch of science. But what a number of new ideas this afternoon's walk has afforded you? I do not wonder that you found it amusing; it has been very instructive too. Did *you* see nothing of all these sights, *Robert?*

R. I saw some of them, but I did not take particular notice of them.

Mr. *A.* Why not?

R. I don't know. I did not care about them, and I made the best of my way home.

Mr. *A.* That would have been right if you had been sent of a message; but as you only walked for amusement, it would have been wiser to have sought out as many sources of it as possible. But so it is—one man walks through the world with

with his eyes open, and another with them shut; and upon this difference depends all the superiority of knowledge the one acquires above the other. I have known sailors who had been in all the quarters of the world, and could tell you nothing but the signs of the tippling-houses they frequented in different ports, and the price and quality of the liquor. On the other hand, a Franklin could not cross the channel without making some observations useful to mankind. While many a vacant thoughtless youth is whirled throughout Europe without gaining a single idea worth crossing a street for, the observing eye and inquiring mind finds matter of improvement and delight in every ramble in town or country. Do *you* then, *William*, continue to make use of your eyes; and *you*, *Robert*, learn that eyes were given you to use.

WHY THE EARTH MOVES ROUND THE SUN.

Papa—Lucy.

P. You remember, Lucy, that I explained to you some time ago what was the cause that things fell to the ground.

L. O yes—It was because the ground drew them to it.

P. True. That is a consequence of the universal law in nature, that bodies attract each other in proportion to their bulk. So, a very small thing in the neighbourhood of a very large one, always tends to go to it, if not prevented by some other power. Well—You know I told you that the sun was a ball a vast many times bigger than the ball we inhabit, called the earth; upon which you properly asked, how then it happened

happened that the earth did not fall into the ſun.

L. And why does it not?

P. That I am going to explain to you. You have ſeen your brother whirl round an ivory ball tied to the end of a ſtring which he held in his hand.

L. Yes—And I have done it myſelf, too.

P. Well then—you felt that the ball was continually pulling, as if it tried to make its eſcape.

L. Yes; and one my brother was ſwinging *did* make its eſcape, and flew through the ſaſh.

P. It did ſo. That was a leſſon in the *centrifugal* motion, or that power by which a body thus whirled continually endeavours to fly off from the centre round which it moves. This is owing to the force or impulſe you give it at ſetting out, as if you were going to throw it away from you. The ſtring

by

by which you hold it, on the contrary, is the power which keeps the ball towards the centre, called the *centripetal* power. Thus you see there are two powers acting upon the ball at the same time; one to make it fly off, the other to hold it in; and the consequence is, that it moves directly according to neither, but between both; that is, round and round. This it continues to do while you swing it properly; but if the string breaks or slips off, away flies the ball; on the other hand, if you cease to give it the whirling force, it falls towards your hand.

L. I understand all this.

P. I will give you another instance of this double force acting at the same time. Do not you remember seeing some curious feats of horsemanship?

L. Yes.

P. One of them was, that a man standing with one leg upon the saddle and riding full speed, threw up balls

into the air, and catched them as they fell.

L. I remember it very well.

P. Perhaps you would have expected these balls to have fallen behind him, as he was going at such a rate.

L. So I did.

P. But you saw that they fell into his hand as directly as if he had been standing quite still. That was because at the instant he threw them up, they received the motion of the horse straight forwards, as well as the upright motion that he gave them, so that they made a slanting line through the air, and came down in the same place they would have reached if he had held them in his hand all the while.

L. That is very curious, indeed!

P. In the same manner, you may have observed, in riding in a carriage, that if you throw any thing out of the window, it falls directly opposite, just as

as if the carriage was ſtanding ſtill, and is not left behind you.

H. I will try that, the next time I ride in one.

P. You are then to imagine the ſun to be a mighty maſs of matter, many thouſand times bigger than our earth, placed in the centre, quiet and unmoved. You are to conceive our earth, as ſoon as created, launched with vaſt force in a ſtraight line, as if it were a bowl on a green. It would have flown off in this line for ever, through the boundleſs regions of ſpace, had it not at the ſame inſtant received a pull from the ſun by its attraction. By the wonderful ſkill of the Creator, theſe two forces were made exactly to counterbalance each other; ſo that juſt as much as the earth from the original motion given it tends to fly forwards, juſt ſo much the ſun draws it to the centre; and the conſequence is, that it takes a courſe between

between the two, which is a circle round and round the sun.

L. But if the earth was set a rolling like a bowl upon a green, I should think it would stop of itself, as the bowl does.

P. The bowl stops because it is continually rubbing against the ground, which checks its motion; but the ball of the earth moves in empty space, where there is nothing to stop it.

L. But if I throw a ball through the air, it will not go on for ever, but it will come down to the ground.

P. That is because the force with which you can throw it, is much less than the force by which it is drawn to the earth. But there is another reason too, which is the resistance of the air. This space all around us and over us is not empty space; it is quite full of a thin transparent fluid called air.

L. Is it?

P. Yes.

P. Yes. If you move your hand quickly through it, you will find ſomething reſiſting you, though in a ſlight degree. And the wind, you well know, is capable of preſſing againſt any thing with almoſt irreſiſtible force; and yet wind is nothing but a quantity of air put into violent motion. Every thing then that moves through the air, is continually obliged to puſh ſome of this fluid out of the way, by which means it is conſtantly loſing part of its motion.

L. Then the earth would do the ſame.

P. No; for it moves in *empty ſpace.*

L. What! does not it move through the air?

P. The earth does not move *through* the air, but carries the air along with it. All the air is contained in what is called the *atmoſphere*, which you may compare to a kind of miſt or fog clinging all round to the ball of the earth, and reaching

reaching to a certain diſtance above it, which has been calculated at about forty-five miles.

L. That is above the clouds, then.

P. Yes; all the clouds are within the atmoſphere, for they are ſupported by the air. Well—this atmoſphere rolls about along with the earth, as if it were a part of it; and moves with it through the ſky, which is a vaſt field of empty ſpace. In this immenſe ſpace are all the ſtars and planets, which have alſo their ſeveral motions. There is nothing to ſtop them, but they continually go on, by means of the force that the Creator has originally impreſſed upon them.

L. Do not ſome of the ſtars move round the ſun, as well as our earth.

P. Yes; thoſe that are called *planets*. Theſe are all ſubject to the ſame laws of motion with our earth. They are attracted by the ſun as their centre, and form, along with the earth, that aſſem-

blage

blage of worlds, which is called the *ſolar ſyſtem*.

L. Is the moon one of them?

P. The moon is called a *ſecondary* planet, becauſe its immediate connexion is with our earth, round which it rolls, as we do round the ſun. It however accompanies our earth in its journey round the ſun. But I will tell you more about its motion, and about the other planets and ſtars, another time. It is enough at preſent, if you thoroughly underſtand what I have been deſcribing.

L. I think I do.

DIFFERENCE

DIFFERENCE AND AGREEMENT;

OR,

SUNDAY MORNING.

It was Sunday morning. All the bells were ringing for church, and the ſtreets were filled with people moving in all directions.

Here, numbers of well-dreſſed perſons, and a long train of charity children, were thronging in at the wide doors of a large handſome church. There, a ſmaller number, almoſt equally gay in dreſs, were entering an elegant meeting-houſe. Up one alley, a Roman Catholic congregation was turning into their retired chapel, every one croſſing himſelf with a finger dipt in holy-water as he went in. The oppoſite ſide of the ſtreet was covered with a train of quakers, diſtinguiſhed by their plain and

neat attire, and ſedate aſpect, who walked without ceremony into a room as plain as themſelves, and took their ſeats, the men on one ſide and the women on the other, in ſilence. A ſpacious building was filled with an overflowing crowd of Methodiſts, moſt of them meanly habited, but decent and ſerious in demeanour; while a ſmall ſociety of Baptiſts in the neighbourhood quietly occupied their humble place of aſſembly.

Preſently the different ſervices began. The churches reſounded with the ſolemn organ, and with the indiſtinct murmurs of a large body of people following the miniſter in reſponſive prayers. From the meetings were heard the ſlow pſalm, and the ſingle voice of the leader of their devotions. The Roman Catholic chapel was enlivened by ſtrains of muſic, the tinkling of a ſmall bell, and a perpetual change of ſervice and ceremonial. A profound ſilence and unvarying look and poſture announced

announced the self-recollection and inward devotion of the Quakers.

Mr. *Ambroſe* led his ſon *Edwin* round all theſe different aſſemblies as a ſpectator. *Edwin* viewed every thing with great attention, and was often impatient to inquire of his father the meaning of what he ſaw; but Mr. *Ambroſe* would not ſuffer him to diſturb any of the congregations even by a whiſper. When they had gone through the whole, *Edwin* found a great number of queſtions to put to his father, who explained every thing to him in the beſt manner he could. At length ſays *Edwin*,

But why cannot all theſe people agree to go to the ſame place, and worſhip God the ſame way?

And why ſhould they agree? (replied his father.) Do not you ſee that people differ in a hundred other things? Do they all dreſs alike, and eat and drink alike, and keep the ſame hours, and uſe the ſame diverſions?

Ay—but thoſe are things in which they have a right to do as they pleaſe.

And they have a right, too, to worſhip God as they pleaſe. It is their own buſineſs, and concerns none but themſelves.

But has not God ordered particular ways of worſhipping him?

He has directed the mind and ſpirit with which he is to be worſhipped, but not the particular form and manner. That is left for every one to chooſe, according as ſuits his temper and opinions. All theſe people like their own way beſt, and why ſhould they leave it for the choice of another? Religion is one of the things in which *mankind were made to differ*.

The ſeveral congregations now began to be diſmiſſed, and the ſtreet was again overſpread with perſons of all the different ſects, going promiſcuouſly to their reſpective homes. It chanced that a poor man fell down in the ſtreet

in a fit of apoplexy, and lay for dead. His wife and children ſtood round him crying and lamenting in the bittereſt diſtreſs. The beholders immediately flocked round, and, with looks and expreſſions of the warmeſt compaſſion, gave their help. A Churchman raiſed the man from the ground by lifting him under the arms, while a Diſſenter held his head and wiped his face with his handkerchief. A Roman Catholic lady took out her ſmelling bottle, and aſſiduouſly applied it to his noſe. A Methodiſt ran for a doctor. A Quaker ſupported and comforted the woman, and a Baptiſt took care of the children.

Edwin and his father were among the ſpectators. Here (ſaid Mr. *Ambroſe*) is a thing in which *mankind were made to agree.*

TWENTIETH EVENING.

ON METALS.

PART 2.

Tutor—George—Harry.

T. Well—have you forgot what I told you about metals the other day?

G. O no!

H. I am ſure I have not.

T. What metals were they that we talked about?

G. Gold, ſilver, and quickſilver.

T. Suppoſe, then, we go on to the reſt!

G. Pray do.

H. Yes, by all means.

T. Very

T. Very well. You know *copper*, I don't doubt.

G. O yes!

T. What colour do you call it?

G. I think it is a ſort of reddiſh brown.

T. True. Sometimes, however, it is of a bright red, like ſealing-wax. It is not a very heavy metal, being not quite nine times the weight of water. It is pretty ductile, bearing to be rolled or hammered out to a very thin plate, and alſo to be drawn out to a fine wire.

H. I remember ſeeing a halfpenny that had been rolled out to a long ribbon.

G. Yes, and I have ſeen half a dozen men at a time with great hammers beating out a piece of copper at the brazier's.

T. Copper requires a very conſiderable heat to melt it; and by long expoſure to the fire, it may be burned

or calcined; for it, like all we are now to ſpeak of, is an *imperfect* metal.

H. And it ruſts very eaſily, does it not?

T. It does; for all acids diſſolve or corrode it, ſo do ſalts of every kind; whence even air and common water in a ſhort time act upon it, for they are never free from ſomewhat of a ſaline nature.

G. Is not verdegris the ruſt of copper?

T. It is;—a ruſt produced by the acid of grapes. But every ruſt of copper is of a blue or green colour, as well as verdegris.

H. And are they all poiſon, too?

T. They are all ſo in ſome degree, producing violent ſickneſs and pain in the bowels. They are all, too, extremely nauſeous to the taſte; and the metal itſelf, when heated, taſtes and ſmells very diſagreeably.

G. Why

G. Why is it uſed, then, ſo much in cooking, and brewing, and the like?

T. Becauſe it is a very convenient metal for making veſſels, eſpecially large ones, as it is eaſily worked, and is ſufficiently ſtrong though hammered thin, and bears the fire well. And if veſſels of it are kept quite clean, and the liquor not ſuffered to ſtand long in them when cold, there is no danger in their uſe. But copper veſſels for cooking are generally lined on the inſide with tin.

G. What elſe is copper uſed for?

T. A variety of things. Sheets of copper are ſometimes uſed to cover buildings; and of late a great quantity is conſumed in ſheathing ſhips, that is, in covering all the part under water; the purpoſe of which is to protect the timber from the worms, and alſo to make the ſhip ſail faſter, by means of the greater ſmoothneſs and force with

which the copper makes way through the water.

H. Money is made of copper, too.

T. It is; for it takes an impreſſion in coining very well, and its value is a proper proportion below ſilver for a price for the cheapeſt ſort of commodities. In ſome poor countries they have little other than copper coin. Another great uſe of copper is as an ingredient in mixed metals, ſuch as bell-metal, cannon-metal, and particularly braſs.

H. But braſs is yellow.

T. True; it is converted to that colour by means of another metallic ſubſtance named *zinc*, or *ſpelter*, the natural colour of which is white. A kind of brown ſtone called *calamine* is an ore of zinc. By filling a pot with layers of powdered calamine and charcoal placed alternately with copper, and applying a pretty ſtrong heat, the zinc is driven in vapour out of the calamine, and

and penetrates the copper, changing it into brass.

G. What is the use of turning copper into brass?

T. It gains a fine gold-like colour, and becomes harder, more easy to melt, and less liable to rust. Hence it is preferred for a variety of utensils, ornamental and useful. Brass does not bear hammering well, but is generally cast into the shape wanted, and then turned in a lathe and polished. Well—these are the principal things I have to say about copper.

H. But where does it come from?

T. Copper is found in many countries. Our island yields abundance, especially in Wales and Cornwall. In Anglesey is a whole hill called Paris-mountain, consisting of copper ore, from which immense quantities are dug every year. Now for *iron*.

H. Ay; that is the most useful of all the metals.

T. I think it is; and it is likewiſe the moſt common, for there are few countries in the world poſſeſſing hills and rocks where it is not met with, more or leſs. Iron is the hardeſt of metals, the moſt elaſtic or ſpringy, the moſt tenacious or difficult to break, next to gold, the moſt difficultly fuſible, and one of the lighteſt, being only ſeven or eight times heavier than water.

C. You ſay it is difficult to break; but I ſnapt the blade of a penknife the other day by only bending it a little; and my mother is continually breaking her needles.

T. Properly objected! But the qualities of iron differ extremely according to the method of preparing it. There are forged iron, caſt iron, and ſteel, which are very different from each other. Iron when firſt melted from its ore, has little malleability, and the veſſels and other implements that are made of it in that ſtate by caſting into moulds, are eaſily

eaſily broken. It acquires toughneſs and malleability by *forging*, which is done by beating it when red hot with heavy hammers, till it becomes ductile and flexible. Steel, again, is made by heating ſmall bars of iron with wood-aſhes, charcoal, bone and horn ſhavings, or other inflammable matters, by which it acquires a finer grain and more compact texture, and becomes harder and more elaſtic. Steel may be rendered either very flexible, or brittle, by different manners of *tempering*, which is performed by heating and then quenching it in water. Steel is iron in its more perfect ſtate.

G. All cutting inſtruments are made of ſteel, are they not?

T. Yes; and the very fine edged ones are generally tempered brittle, as razors, penknives, and ſurgeon's inſtruments; but ſword-blades are made flexible, and the beſt of them will bend double without breaking or becoming

crooked. The ſteel of which ſprings are made, have the higheſt poſſible degree of elaſticity given them. A watch-ſpring is one of the moſt perfect examples of this kind. Steel for ornaments is made extremely hard and cloſe-grained, ſo as to bear an exquiſite poliſh. Common hammered iron is chiefly uſed for works of ſtrength, as horſe-ſhoes, bars, bolts, and the like. It will bend but not ſtraighten itſelf again, as you may ſee in the kitchen poker. Caſt iron is uſed for pots and cauldrons, cannons, cannon-balls, grates, pillars, and many other purpoſes in which hardneſs without flexibility is wanted.

G. What a vaſt variety of uſes this metal is put to!

T. Yes; I know not when I ſhould have done, if I were to tell you of all.

H. Then I think it is really more valuable than gold, though it is ſo much cheaper.

T. That

T. That was the opinion of the wise Solon, when he observed to the rich king Crœsus, who was shewing him his treasures, "he who possesses more iron will soon be master of all this gold."

H. I suppose he meant weapons and armour.

T. He did; but there are many nobler uses of this metal; and few circumstances denote the progress of the arts in a country more than having attained the full use of iron, without which scarcely any manufacture or machinery can be brought to perfection. From the difficulty of melting it out of the ore, many nations have been longer in discovering it than some of the other metals. The Greeks in Homer's time seem to have employed copper or brass for their weapons much more than iron; and the Mexicans and Peruvians, who possessed gold and silver, were unacquainted with iron when the Spaniards invaded them.

G. Iron is very ſubject to ruſt, however.

T. It is ſo, and that is one of its worſt properties. Every liquor, and even a moiſt air, corrodes it. But the ruſt of iron is not pernicious; on the contrary it is a very uſeful medicine.

G. I have heard of ſteel drops and ſteel filings given for medicines.

T. Yes; iron is given in a variety of forms, and the property of them all is to ſtrengthen the conſtitution. Many ſprings are made medicinal by the iron that they diſſolve in the bowels of the earth. Theſe are called *chalybeate* waters, and they may be known by their inky taſte, and the ruſt-coloured ſediment they leave in their courſe.

H. May we drink ſuch water if we meet with it?

T. Yes; it will do you no harm, at leaſt. There is one other property of iron well worth knowing, and that is, that

that it is the only thing attracted by the magnet, or loadſtone.

G. I had a magnet once that would take up needles and keys: but it ſeemed a bar of iron itſelf.

T. True. The real loadſtone, which is a particular ore of iron, can communicate its virtue to a piece of iron by rubbing it; nay, a bar of iron itſelf, in length of time, by being placed in a particular poſition, will acquire the ſame property.

G. Is all the iron uſed in England, produced here?

T. By no means. Our extenſive manufactures require a great importation of iron. Much is brought from Norway, Ruſſia, and Sweden; and the Swediſh is reckoned particularly excellent. Well—now to another metal. I dare ſay you can tell *me* a good deal about *lead*.

H. I

H. I know ſeveral things about it. It is very heavy and ſoft, and eaſily melted.

T. True; thoſe are ſome of its diſtinguiſhing properties. Its weight is between eleven and twelve times that of water. Its colour is a dull bluiſh white; and from this livid hue, as well as its being totally void of ſpring or elaſticity, it has acquired a ſort of character of dulneſs and ſluggiſhneſs. Thus we ſay of a ſtupid man, that he has a *leaden* diſpoſition.

G. Lead is very malleable, I think.

T. Yes; it may be beat out into a pretty thin leaf, but it will not bear drawing into fine wire. It is not only very fuſible, but very readily calcined by heat, changing into a powder, or a ſcaly matter, which may be made to take all colours by the fire, from yellow to deep red. You have ſeen red lead?

G. Yes.

T. That

T. That is calcined lead expoſed for a conſiderable time to a ſtrong flame. Lead may even be changed into glaſs by a moderate heat; and there is a good deal of it in our fineſt glaſs.

G. What is white lead?

T. It is lead corroded by the ſteam of vinegar. Lead in various forms is much uſed by painters. Its calces diſſolve in oil, and are employed for the purpoſe of thickening paint and making it dry. All lead paints, however, are unwholeſome as long as they continue to ſmell, and the fumes of lead when melted are likewiſe pernicious. This is the cauſe why painters and plumbers are ſo ſubject to various diſeaſes, particularly violent colics, and palſies. The white-lead manufacture is ſo hurtful to the health, that the workmen in a very ſhort time are apt to loſe the uſe of their limbs, and be otherwiſe ſeverely indiſpoſed.

H. I wonder, then, that anybody will work in them.

T. Ig-

T. Ignorance and high wages are ſufficient to induce them. But it is to be lamented that in a great many manufactures, the health and lives of individuals are facrificed to the convenience and profit of the community. Lead, too, when diſſolved, as it may be, in all four liquors, is a ſlow poiſon, and the more dangerous, as it gives no diſagreeable taſte. A ſalt of lead made with vinegar is ſo ſweet as to be called the ſugar of lead. It has been too common to put this or ſome other preparation of lead into ſour wines, in order to cure them; and much miſchief has been done by this practice.

G. If lead is poiſonous, is it not wrong to make water-pipes and ciſterns of it?

T. This has been objected to; but it does not appear that water can diſſolve any of the lead. Nor does it readily ruſt in the air, and hence it is much uſed to cover buildings with, as well as

to

to line ſpouts and water-courſes. For theſe purpoſes, the lead is caſt into ſheets, which are eaſily cut and hammered into any ſhape.

H. Bullets and ſhot, too, are made of lead.

T. They are; and in this way it is ten times more deſtructive than as a poiſon.

G. I think more lead ſeems to be uſed than any metal except iron.

T. It is; and the plenty of it in our country is a great benefit to us, both for domeſtic uſe, and as an article that brings in much profit by exportation.

G. Where are our principal lead-mines?

T. They are much ſcattered about our iſland. The weſt of England produces a good deal, in Cornwall, Devonſhire, and Somerſetſhire. Wales affords a large quantity. Derbyſhire has long been noted for its lead-mines, and ſo have Northumberland and Durham.

And

And there are conſiderable ones in the ſouthern part of Scotland. Now do you recollect another metal to be ſpoken about?

G. Tin.

T. True. Tin reſembles lead in colour, but has a more ſilvery whiteneſs. It is ſoft and flexible, like lead, but is diſtinguiſhed by the crackling noiſe it makes on being bent. It melts as eaſily as lead, and alſo is readily calcined by keeping it in the fire. It is the lighteſt of the metals, being only ſeven times heavier than water. Tin may be beat into a thin leaf, but not drawn out to wire.

G. Is tin of much uſe?

T. It is not often uſed by itſelf, but very frequently in conjunction with other metals. As tin is little liable to ruſt, or to be corroded by common liquors, it is employed for a lining or coating of veſſels made of copper or iron.

iron. The ſaucepans and kettles in the kitchen, you know, are all tinned.

C. Yes. How is it done?

T. By melting the tin and ſpreading it upon the ſurface of the copper, which is firſt lightly pitched over, in order to make the tin adhere.

H. But what are the veſſels made at the tinman's? Are not they all tin?

T. No. *Tinned*-ware (as it is properly called) is made of thin iron plates coated over with tin by dipping them into a veſſel full of melted tin. Theſe plates are afterwards cut and bent to proper ſhapes, and the joinings are ſoldered together with a mixture of tin and other metals. Another ſimilar uſe of tin is in what is called the ſilvering of pins.

C. What—is not that real ſilvering?

T. No. The pins, which are made of braſs wire, after being pointed and headed, are boiled in water in which grain-

tin

tin is put, along with tartar, which is a cruſt that collects on the inſide of wine caſks. The tartar diſſolves ſome of the tin, and makes it adhere to the ſurface of the pins; and thus thouſands are covered in an inſtant.

H. That is as clever as what you told us of the gilding of buttons.

T. It is. Another purpoſe for which great quantities of tin uſed to be employed, was the making of pewter. The beſt pewter conſiſts chiefly of tin, with a ſmall mixture of other metals to harden it; and the London pewter was brought to ſuch perfection as to look almoſt as well as ſilver.

G. I can juſt remember a long row of pewter plates at my grandmother's.

T. You may. In her time all the plates and diſhes for the table were made of pewter; and a handſome range of pewter ſhelves was thought a capital ornament for a kitchen. At preſent this trade is almoſt come to nothing through

the

the uſe of earthen ware and china; and pewter is employed for little, but ſtills and barber's baſons, and porter pots. But a good deal is ſtill exported. Tin is likewiſe an ingredient in other mixed metals for various purpoſes, but on the whole, leſs of it is uſed than of the other common metals.

G. Is not England more famous for tin than any other country? I have read of the Phœnicians trading here for it in very early times.

T. They did; and tin is ſtill a very valuable article of export from England. Much of it is ſent as far as China. The tin-mines here are chiefly in Cornwall, and I believe they are the moſt productive of any in Europe. Very fine tin is alſo got in the peninſula of Malacca in the Eaſt Indies. Well—we have now gone through the metals.

G. But you ſaid ſomething about a kind of metal called zinc.

T. That

T. That is one of another claſs of mineral ſubſtances, called *ſemi-metals*. Theſe reſemble metals in every quality but ductility, of which they are almoſt wholly deſtitute, and for want of it they can ſeldom be uſed in the arts, except when joined with metals.

G. Are there many of them?

T. Yes, ſeveral; but we will not talk of them till I have taken ſome opportunity of ſhowing them to you, for probably you may never have ſeen any of them. Now try to repeat the names of all the metals to me in the order of their weight.

H. There is firſt *gold*.

G. Then *quickſilver*, *lead*, *ſilver*.

H. *Copper*, *iron*, *tin*.

T. Very right. Now I muſt tell you of an odd fancy that chymiſts have had of chriſtening theſe metals by the names of the heavenly bodies. They have called gold, *Sol* or the Sun.

G. That

G. That is ſuitable enough to its colour and brightneſs.

H. Then ſilver ſhould be the moon, for I have heard moonlight called of a ſilvery hue.

T. True—and they have named it ſo. It is *Luna*. Quickſilver is *Mercury*, ſo named probably from its great propenſity to dance and jump about, for *Mercury*, you know, was very nimble.

G. Yes—he had wings to his heels.

T. Copper is *Venus*.

G. Venus! ſurely it is ſcarcely beautiful enough for that.

T. But they had diſpoſed of the moſt beautiful ones before. Iron is *Mars*.

H. That is right enough, becauſe ſwords are made of iron.

T. True. Then tin is *Jupiter*, and lead, *Saturn*; I ſuppoſe only to make out the number. Yet the dulneſs of lead might be thought to agree with that planet which is moſt remote from

the ſun. Theſe names, childiſh as they may ſeem, are worth remembering, ſince chymiſts and phyſicians ſtill apply them to many preparations of the various metals. You will probably often hear of *martial*, *lunar*, *mercurial*, and *ſaturnine*; and you may now know what they mean.

G. I think the knowledge of metals ſeems more uſeful than all you have told us about plants.

T. I don't know that. Many nations make no uſe at all of metals, but there are none which do not owe a great part of their ſubſiſtence to vegetables. However, without enquiring what parts of natural knowledge are *moſt* uſeful, you may be aſſured of this, that all are uſeful in ſome degree or other; and there are few things that give one man greater ſuperiority over another, than the extent and accuracy of his knowledge in theſe particulars. One perſon paſſes all his life upon the earth, a

ſtranger to it; while another finds himſelf at home every where.

WHAT ANIMALS ARE MADE FOR.

PRAY, Papa, (ſaid *Sophia* after ſhe had been a long while teaſed with the flies that buzzed about her ears, and ſettled on her noſe and forehead as ſhe ſat at work)—Pray what were flies made for?

For ſome good, I dare ſay, (replied her Papa.)

S. But I think they do a great deal more harm than good, for I am ſure they plague me ſadly; and in the kitchen they are ſo troubleſome, that the maids can hardly do their work for them.

P. Flies eat up many things that would otherwiſe corrupt and become

loathſome; and they ſerve for food to birds, ſpiders, and many other animals.

S. But we could clean away every thing that was offenſive without their help; and as to their ſerving for food, I have ſeen whole heaps of them lying dead in a window, without ſeeming to have done good to any thing.

P. Well then. Suppoſe a fly capable of thinking; would he not be equally puzzled to find out what men were good for? This great two-legged monſter, he might ſay, inſtead of helping us to live, devours more food at a meal than would ſerve a whole legion of flies. Then he kills us by hundreds when we come within his reach; and I ſee him deſtroy and torment all other animals too. And when he dies, he is nailed up in a box and put a great way under ground, as if he grudged doing any more good after his death, than when alive.

Now

Now what would you anſwer to ſuch a reaſoning fly?

S. I would tell him he was very impertinent for talking ſo of his betters; for that he and all other creatures were made for the uſe of man, and not man for theirs.

P. But would you tell him true? You have juſt been ſaying that you could not find out of what uſe flies were to us; whereas, when they ſuck our blood, there is no doubt that we are of uſe to them.

S. It is that which puzzles me.

P. There are many other animals which we call *noxious*, and which are ſo far from being uſeful to us, that we take all poſſible pains to get rid of them. More than that, there are vaſt tracts of the earth where few or no men inhabit, which are yet full of beaſts, birds, inſects, and all living things. Theſe certainly do not exiſt there for his uſe alone.

On the contrary, they often keep man away.

S. Then what are they made for?

P. They are made to be happy. It is a manifeſt purpoſe of the Creator to give being to as much life as poſſible, for life is enjoyment to all creatures in health and in poſſeſſion of their faculties. Man ſurpaſſes other animals in his powers of enjoyment, and he has proſpects in a future ſtate which they do not ſhare with him. But the Creator equally deſires the happineſs of all his creatures, and looks down with as much benignity upon theſe flies that are ſporting around us, as upon ourſelves.

S. Then we ought not to kill them if they are ever ſo troubleſome.

P. I do not ſay that. We have a right to make a reaſonable uſe of all animals for our advantage, and alſo to free ourſelves from ſuch as are hurtful to us. So far our ſuperiority over them may fairly extend. But we ſhould never

abuſe

abuse them for our mere amusement, nor take away their lives wantonly. Nay, a good-natured man will rather undergo a *little* inconvenience, than take away from a creature all that it possesses. An infant may destroy life, but all the kings upon earth cannot restore it. I remember reading of a good-tempered old gentleman, that having been a long time plagued with a great fly that buzzed about his face all dinner-time, at length, after many efforts, caught it. Instead of crushing it to death, he held it carefully in his hand, and opening the window, "Go, (said he)—get thee gone, poor creature; I wo'nt hurt a hair of thy head; surely the world is wide enough for thee and me."

S. I should have loved that man.

P. One of our poets has written some very pretty lines to a fly that came to partake with him of his wine. They begin,

Busy,

Busy, curious, thirsty fly,
Drink with me, and drink as I;
Welcome freely to my cup,
Could'st thou sip and sip it up.

S. How pretty! I think they will almost make me love flies. But pray, Papa, do not animals destroy one another?

P. They do indeed. The greatest part of them only live by the destruction of life. There is a perpetual warfare going on, in which the stronger prey upon the weaker, and, in their turns, are the prey of those which are a degree stronger than themselves. Even the innocent sheep, with every mouthful of grass, destroys hundreds of small insects. In the air we breathe, and the water we drink, we give death to thousands of invisible creatures.

S. But is not that very strange? If they were created to live and be happy, why should they be destroyed so fast?

P. They

P. They are deſtroyed no faſter than others are produced; and if they enjoyed life while it laſted, they have had a good bargain. By making animals the food of animals, providence has filled up every chink, as it were, of exiſtence. You ſee theſe ſwarms of flies. During all the hot weather they are continually coming forth from the ſtate of eggs and maggots, and as ſoon as they get the uſe of wings, they roam about, and fill every place in ſearch of food. Meantime they are giving ſuſtenance to the whole race of ſpiders; they maintain all the ſwallow tribe, and contribute greatly to the ſupport of many other ſmall birds; and even afford many a delicate morſel to the fiſhes. Their own numbers, however, ſeem ſcarcely diminiſhed, and vaſt multitudes live on till the cold weather comes and puts an end to them. Were nothing to touch them, they would probably become ſo numerous as to ſtarve

each other. As it is, they are full of enjoyment themſelves, and afford life and enjoyment to other creatures, which in their turn ſupply the wants of others.

S. It is no charity, then, to tear a ſpider's web in pieces in order to ſet a fly at liberty.

P. None at all—no more than it would be to demoliſh the traps of a poor Indian hunter, who depended upon them for his dinner. They both act as nature directs them. Shall I tell you a ſtory?

S. O yes—pray do!

P. A venerable Brahmin, who had never in his days eaten any thing but rice and milk, and held it the greateſt of crimes to ſhed the blood of any thing that had life, was one day meditating on the banks of the Ganges. He ſaw a little bird on the ground picking up ants as faſt as he could ſwallow. Murderous wretch, cried he, what ſcores

of

of lives are ſacrificed to one gluttonous meal of thine! Preſently a ſparrow-hawk pouncing down, ſeized him in his claws, and flew off with him. The Bramin at firſt was inclined to triumph over the little bird; but on hearing his cries, he could not help pitying him. Poor thing, ſaid he, thou art fallen into the clutches of thy tyrant! A ſtronger tyrant, however, took up the matter; for a falcon in mid-air darting on the ſparrow-hawk, ſtruck him to the ground, with the bird lifeleſs in his talon. Tyrant againſt tyrant, thought the Bramin, is well enough. The falcon had not finiſhed tearing his prey, when a lynx, ſtealing from behind the rock on which he was perched, ſprung on him, and having ſtrangled him, bore him to the edge of a neighbouring thicket, and began to ſuck his blood. The Bramin was attentively viewing this new diſplay of retributive juſtice, when a ſudden roar ſhook the air, and a huge tyger, ruſhing

ing from the thicket, came like thunder on the lynx. The Bramin was near enough to hear the craſhing bones, and was making off in great terror, when he met an Engliſh ſoldier, armed with his muſket. He pointed eagerly to the place where the tyger was making his bloody repaſt. The ſoldier levelled his gun, and laid the tyger dead. Brave fellow! exclaimed the Bramin. I am very hungry, ſaid the ſoldier, can you give me a beef-ſteak? I ſee you have plenty of cows here. Horrible! cried the Bramin; what! I kill the ſacred cows of Brama! Then kill the next tyger yourſelf, ſaid the ſoldier.

THE END.

MVSEVM BRITANNICVM